News By Teletype From 4 News Bureaus

National Petroleum News

News From Oil Industry Everywhere

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Freight Rates For Southeast To Be Slashed

By Teletype
N. P. N. News Bureau

WASHINGTON, Nov. 8.—Reports that southeastern railroads were planning new and deeper rate cuts on gasoline and kerosine moving inland from marine terminals were confirmed today by Roy J. Brown, general freight traffic manager of Southern Railway Co.

Although declining to discuss the details, Brown said that the proposed rate scale would replace the so-called Carolina scale which the rails hoped, at the time of its adoption several years ago, would recapture oil tonnage lost to trucks and barges.

Tieing in with this rate cut on movements from seaport terminals, Brown said, would be a reduction in rates from the New Orleans-Baton Rouge Group.

The southeastern states for several years have been a major battleground of the rails' war against trucks and barges. Repeated rate cuts, however, have failed to keep the oil tonnage on the rails.

First reports were that the new rate scale, from southeastern ports inland, would be based on a 27-cent rate from Savannah, Ga., to Atlanta, representing a combination of the reputed barging cost up the Savannah river to Augusta and the truck rate from Augusta. But now, later information indicates, the basis may be a 25-cent rate. In fact, several rail lines are momentarily expected to announce a 25-cent Savannah-Atlanta rate.

Hearing Scheduled

If the basis is the 25-cent rate, then there will likely be further reductions in the proposed new rates from the New Orleans-Baton Rouge Group, on which a hearing at Atlanta is scheduled for Nov. 14 before the Southern Freight Assn.

None of the rate cut proposals now pending involve corresponding reductions from origin points west of the Mississippi river. Hopes of southwestern refiners, particularly in the so-called Shreveport area, that they might get a "break" were further dimmed this week in the turndown of the proposal to reduce rates to Tennessee and

(*Continued on page* 26)

ON THE COVER

The photograph on the cover of this issue shows the new water terminal of the Shell Petroleum Corp. at St. Paul, Minn., on the upper Mississippi, which is now being deepened to a nine-foot stage from St. Louis to St. Paul. The terminal is said to be the largest in the world on an inland waterway for shallow-draft river barges.

The terminal is located on 32.5 acres of a former shallow quarry floor which is 89 feet above normal water level. On the floating dock below are two gasoline engine powered, separately housed, pump units, for unloading barges. Adjoining the new Shell plant on the left is the new terminal of the Socony-Vacuum Oil Co.

Special articles in this issue devoted to oil's own transportation methods are to be found on pages 36-144.

U. S. Supreme Court Sustains ICC Order On 'Dual' Rail Rate

By Teletype
N. P. N. News Bureau

WASHINGTON, Nov. 8.—U. S. Supreme Court today upheld the right of railroads to publish freight rates on petroleum products based on "dual minima", over the protest of tank truckers in Washington and Oregon.

The case was appealed to the high court by a group of petroleum truckers in the two states after a U. S. district court had upheld the Interstate Commerce Commission's right to allow the rail rates.

The rail rates were filed early last year, providing that shipments from Washington and Oregon seaports to inland points in car lots of 8000 gallons or more should move at rates 10 per cent below shipments less than this gallonage. The trucks protested at the time, and ICC suspended the rates, pending an investigation.

Last Nov. 30, following an investigation, however, ICC issued an order vacating the suspension (N. P. N. Dec. 8, page 13), which allowed the dual minima rates to go into effect. Then the truckers filed an equity suit in federal court, contending that the order discriminated against truck movement, since trucks were unable to haul at the higher minimum gallonage for which the rails exacted the lower rate.

The U. S. District court's opinion, which was affirmed by the Supreme court, held that the ICC's order vacating the suspension was a "negative" order "over which the court has no jurisdiction."

Truckers had contended that, while the order was in fact negative, it was, in effect positive, since it permitted the railroads the relief they sought.

Petitioning truckers included Diamond Truck Transport, Inc., Inland Petroleum Transportation Co. Inc., West Coach Transport, Inc., and West Forwarding Co.

Southwest Worried By 'Orphaned' Wells

N. P. N. News Bureau

TULSA, Nov. 5.—Some 12,000 barrels of crude oil production, in three producing districts in Oklahoma and Texas, is now "orphaned," without a market outlet, it is estimated.

Reports from the East Texas field the first of the month were that about 540 wells lacked a market for their production. Deducting from the allowables of these wells the amount cut off by the Saturday and Sunday shutdowns, which are being continued by order of the Texas Railroad Commission as part of the proration program, their daily production would be about 7500 barrels of crude.

Most of the production from these wells has been going to refineries in the East Texas field and at present there is no indication that relief from this source will be given these wells, some of the production from which is being run to storage now.

This condition in East Texas is about on a par with that existing in July and August, when several of the local gathering systems in this field whose business it is to buy crude and deliver it for resale to local refiners and major oil companies, lost their markets. Then there was a threat of between 500 and 600 wells being without market. This situation last summer was cleared up chiefly by the major companies, who took on additional connections and in some instances renewed contracts with local gathering systems or made new contracts.

No market has yet been provided for the approximately 4000 barrels daily of stripper well production in east Osage and Tulsa counties, in Oklahoma, which Barnsdall Oil Co. ceased purchasing Oct. 15. Barnsdall Refining Co. had offered to become the buyer of this oil at 12 cents a barrel less for the principal grade than the major companies' posting.

Osage Council Rejects

This was rejected by the Osage Tribal Council and Barnsdall Refining then offered to gather and store the crude for a pipeline charge of 12 cents a barrel and one cent per barrel per month storage. The storage plan was considered at a meeting of affected operators in Tulsa Nov. 4 but not all operators were represented at this meeting and a later one is necessary.

Globe Oil & Refining Co. corrected widely published reports that it was withdrawing as a crude oil purchaser in the Oklahoma City field and in fields in northern Oklahoma. It is, however, reducing its takings from the Oklahoma City field by about

HIGHLIGHTS OF THE NEWS

WASHINGTON — Anti-Trust Chief Arnold hits oil ads. Page 18.

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TULSA — Many Mid-Continent wells are again 'orphaned.' Page 17.

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WASHINGTON — ICC considers regulating private trucks. Page 19.

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CHICAGO — Truckers say 10-hour day 'too short.' Page 25.

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LOS ANGELES — Japs buy less U. S. crude. Page 28.

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TULSA — Independent producers plan to tell their story to public. Page 27.

* * *

NEW YORK — 'Gas' consumption holds lead over 1937. Page 30.

1000 barrels daily in November, as compared with October.

In September the company took through its own gathering system—it also buys Oklahoma City oil under contract from other companies with gathering lines—a little more than 5000 barrels daily, and this was reduced slightly in October.

Sinclair Prairie Oil Marketing Co. has told stripper well producers in the old field in Montgomery county, Kansas, it would cease taking their oil Nov. 15. Less than 150 barrels of production daily is involved. The Kansas Corporation Commission has called a hearing on the subject for Nov. 11. Operators affected likely will ask the commission to compel the Sinclair company to keep on buying. Whether the state regulatory body has such authority has not been formally raised in Kansas before.

November Allowables

All the states in the southwest operating under proration orders now have their November allowables, except Kansas. It appears now that the October order in this state will govern production throughout November, as the state corporation commission, after recessing a hearing begun on Oct. 27 to Nov. 2, then called everything off until Nov. 22.

The October allowable in Kansas, still in effect, was 163,400 barrels daily, but market demand had not equalled this figure recently. The regular monthly hearing, intended to be devoted to a survey of market demand in the state, was promptly turned into a discussion of the "special" allowables the commission has been granting. It was intimated, though not substantiated by records, that some of the crude produced under these special orders has moved at lower than prevailing posted prices.

Reviewing briefly the November orders of the four other states:

Texas retained its Saturday and Sunday shut-downs and set its allowable at 1,279,653 barrels daily, slightly higher than October.

The Oklahoma Corporation Commission adopted a 428,000-barrel figure for this state, the same as has prevailed for several months. The allowable has been exceeded each month by actual production.

Louisiana called for 235,500 barrels daily for November, a reduction of 24,970 barrels from October. New Mexico set a figure of 108,400 barrels for the month, compared to 103,800 barrels daily for the last half of October.

It may be of interest to some readers to compare these November allowables in the southwest with the figures for November a year ago, when the state regulatory commissions were just beginning to realize that the industrial letdown over the country was affecting the demand for crude oil from the producing fields in their states. The following allowables for November prevailed a year ago: Texas, 1,386,949 barrels daily; Oklahoma, 575,000 barrels; Kansas, 180,215 barrels; Louisiana, 253,150; New Mexico, 104,000 barrels daily.

Arnold Scores Oil's 'Ads' As Control By 'Monopoly'

N. P. N. News Bureau

WASHINGTON, Nov. 7.—Restriction of oil industry—and all other—advertising, to prevent "its use for the purpose of giving a monopoly advantage to the competitor with the largest pocketbook," may be one of the recommendations which Anti-trust Chief Thurman W. Arnold will ask the O'Mahoney monopoly committee to embody in its report to Congress.

Arnold indicated that his philosophy of advertising does not fall in with present methods—particularly those employed by oil companies—in a statement issued today. In fact, so strong were Arnold's words that some observers interpreted them as indicating he believes the present anti-trust laws may have authority to curb the "monopoly control which this advertising gives," without additional legislation.

The vehicle for today's expression of Arnold's feelings about the oil industry was his announcement that the justice department had entered into consent decrees in its anti-trust suits against Ford Motor Co., Universal Credit Co., Chrysler Corp., and Commercial Credit Co., charged with violating the anti-trust laws through their automobile financing practices.

In discussing advertising generally, in connection with the automobile finance cases, Arnold said:

"Monopoly is fostered when advertising is used to put competitors at a disadvantage for the sole reason that they do not have resources sufficient to expend equally large sums in advertising particular products or the services of particular companies (as the justice department asserts the automobile companies had advertised the finance companies).

Then, drawing the analogy between this practice and the practices of the oil industry which his division will probably lay before the O'Mahoney committee next month, Arnold said:

"In the oil industry, to take one example, refiners are deprived of their market because of the belief induced by great expenditure that good gasoline is sold only under particular trade names. The use of trade names itself is old in our law, and has a proper function in identifying to public the goods of manufacturers known for their reliability and integrity.

"But with the advent of modern advertising the trade name has taken on a new use. By a variety of modern refinements upon the methods of the circus barker, advertising is used to build up public preference for the products of one producer or manufacturer solely because he has the most advertising money and can make the most noise. To meet the monopoly control which this advertising gives, the anti-trust laws by themselves are inadequate.

"Such a method of advertising has never been held to be violative of the anti-trust laws, and the legality of its use, in the absence of positive fraud, has not been questioned. Nevertheless, the purpose of the anti-trust laws will be furthered if advertising is limited to its proper function of building up consumption, and if restrictions are placed against its use for the purpose of giving a monopoly advantage to the competitor with the largest pocketbook.

"Where advertising stresses the peculiar qualities of common goods under a particular trade name, competitors must either go out of business or spend like large sums in building up their own trade names for the same common commodity. The result is either a wasteful system of distribution on the one hand, or monopoly on the other."

Vicksburg Rate Cut On Threat To Barge

N. P. N. News Bureau

WASHINGTON, Nov. 7.—A cut of more than 50 per cent in rail freight rates on gasoline and kerosine from New Orleans-Baton Rouge Group points to Vicksburg and nearby points in Mississippi has been authorized by Interstate Commerce Commission on application of the Illinois Central and several other railroads, who said the slash was essential if they were to meet barge competition on the Mississippi river.

Before the cut was granted the rate from group points to Vicksburg was 26 cents per 100 pounds; the cut made it 13 cents per 100 pounds for shipments destined for Vicksburg proper, and 9 cents per 100 pounds when Vicksburg is used as a basing point for shipments to points in Mississippi intermediate to and beyond that city. (Earlier details in N. P. N., Oct. 12, 1938).

Alabama Retailers File R-P Law Suit Citing Five Majors

BIRMINGHAM, Ala., Nov. 5.—Five major oil companies and five leading tire concerns were made defendants in a suit to restrain them from alleged rebating in the retail sale of gasoline which was filed in Federal Court here Nov. 1 by the Alabama Independent Service Station Association, Inc., and others. The suit, brought under the Robinson-Patman law against price discrimination, also asks $100,000 for damages alleged to have been done the plaintiff.

Federal Judge T. A. Murphree set Dec. 7, as the date for a hearing on the petition for a restraining order.

Defendants in the case are the Shell Petroleum Corp., Goodyear Tire & Rubber Co., Gulf Refining Co., Firestone Tire and Rubber Co., The Texas Co., Standard Oil Company of Kentucky, United States Rubber Products, Inc., Pan-American Petroleum Corp., the General Tire & Rubber Co. and the B. F. Goodrich Co.

Besides the Alabama Independent Service Station Association, Inc., other complainants are George L. Gilliland, an individual trading and doing business as the Five Points Service Station, and Howard Andridge, doing business as the South Fifteenth Street Service Station.

The major oil companies are charged with entering into an agreement with the tire companies to supply them with gasoline at a price low enough for them to sell the public at retail prices from 2 to 2½ cents less than their posted prices. It is alleged that this practice was indulged in "for the purpose of enabling each to obtain a monopoly in the sale" of gasoline to Birmingham consumers.

ICC Sets Hearings On Private Trucks

N. P. N. News Bureau

WASHINGTON, Nov. 7. — Interstate Commerce Commission has scheduled hearings, beginning in January, on the question of safety regulations for private motor carriers operating in interstate commerce.

The ICC has prescribed certain safety regulations for for-hire trucks, but not for private carriers — that is, trucks hauling the shippers own property, like an oil company's tank trucks.

The Motor Carrier Act provides (Section 204 (a) s) that the ICC may establish for private carriers, "if the need therefor be found," reasonable requirements to promote safety of operation, "and to that end prescribe qualifications and maximum hours of service of employes and standards of equipment."

Acting under this grant of authority, the ICC issued Nov. 2 a new order on the question of safety regulations for private carriers, setting hearings, as follows: Jan. 9, Washington, D. C.; Jan. 12, New York; Jan. 16, Chicago; Jan. 19, Minneapolis; Jan. 23, Spokane; Jan. 25, Portland, Ore.; Jan. 30, Los Angeles; Feb. 3, Omaha, and Feb. 6, Memphis.

More than two years ago, on July 30, 1936, ICC issued an order initiating an *ex parte* investigation into the *need* for such regulations of private carriers. But no hearings were held under this order.

New Order Broader

The new order regarding private carriers is broader than the one issued in 1936 — in addition to investigating into the *need*, the new one covers establishment of the regulations if the need is found.

In a notice accompanying the order, the ICC said: "In addition to submitting testimony on the need for federal regulation of private carriers of property, it will be helpful to have evidence submitted as to what changes, if any, should be made in the safety regulations prescribed for common and contract carriers in order to make them applicable to private carriers. . ."

One part of the safety regulations for for-hire trucks at present under consideration — that covering transportation of explosives and inflammable liquids (including gasoline)—is also now being considered in connection with its applicability to private carriers in interstate commerce. Hearings were held on these proposed regulations for trucks hauling "dangerous" articles last month at Los Angeles and Tulsa, and another hearing is scheduled at Washington Nov. 21.

ICC officials say that if these latter regulations are adopted as applicable to private trucks, there will be no need to include discussion of explosives and inflammables in the discussions of safety regulations generally for private trucks at the hearings in January and February.

"Parts" Listed

Other sections of the safety regulations already either effective or under consideration for for-hire carriers, applicability of which to private carriers will be studied in the newly initiated proceeding are:

Qualifications of drivers, driving rules, parts and accessories necessary for safe operation, reporting of accidents (these four are now in effect for for-hire carriers), inspection and maintenance, and hours of service.

The commission also has initiated an investigation into the "need" for federal regulation of sizes and weights of trucks. If this results in prescribing of regulations, they will also probably become a part of the safety regulations, which may be applied to private trucks.

Atlanta Rate Cut Proposed

N. P. N. News Bureau

TULSA, Nov. 7.—Southern Freight Association, representing rail carriers operating in the southern states, will hold a hearing Nov. 14 at its offices in Atlanta on the proposal to reduce rates on gasoline to Atlanta from the New Orleans-Baton Rouge Group, preserving differentials with Mobile and Pensacola, but *not* from the Shreveport-El Dorado area, it was learned today. Proposed new rate scale to Atlanta, in cents per hundred pounds was, as follows:

From	Present	Proposed
New Orleans-Baton Rouge	47	34
Mobile	42	31
Pensacola	41	31
Shreveport-El Dorado	54	(No change)

There has been some indication, however, that these rates may be shaved several cents more when the proposal comes for hearing.

Five Million Gallons of 'Gas' Take Fans to the Nation's Football Games

N. P. N. News Bureau

NEW YORK, Nov. 7. — It takes approximately 5,300,000 gallons of gasoline to transport the estimated 16,000,000 fans who annually attend the nation's football games, according to the American Petroleum Institute.

The American Petroleum Industries Committee figures that an average of one gallon of gasoline per car is used getting to and from games, and that a total of approximately $265,000 in gasoline taxes result from that travel.

According to the A.P.I.C., the average burden of state and federal taxes on gasoline is slightly more than five cents per gallon, which, on the above basis, gives the tax collector a cut of nearly two cents a head on the 16,000,000 annual attendance.

Last fall, the Standard Oil Co. of California, as a contribution to safety, wrote to the heads of schools and colleges throughout the Pacific Coast where football stadia are operated, and which are mostly equipped with public address systems.

The suggestion was made that, at a suitable moment near the conclusion of a game, a message be delivered to the crowds to avoid accidents on the return home by driving with caution and consideration.

According to the Standard Oil Bulletin, a company publication, the idea was promptly adopted, and during that football season effective pleas in the interests of safety were made over public address systems of a number of stadia in the west.

The plan was taken up by a number of eastern schools, and various newspapers on the Pacific Coast became interested and lent impetus to the program.

Accidents Eliminated

The Standard Oil Bulletin reports that the president of a large university wrote that for the first time in many years the big football trek to and from a city several hundred miles away, whre a game was played, was accomplished without serious accident or injury to any of the students.

The company has written to officials of educational institutions again this year, suggesting a continuance of the idea.

This football season also marks the second year in which the Standard Oil Co. of Ind. has sent out similar suggestions in a letter to presidents of universities and colleges and principals of high schools in its territory.

In the Indiana Standard's letter, signed by President Edward G. Seubert, the following message is suggested for broadcasting over the stadium's public address system:

"Your attention, please! We want to make a suggestion. Most of us will soon be motoring home. Let's take it easy. Let's avoid accidents. Drive carefully! Give the other fellow a break. Take no chances. Safety first!"

Seubert states in his letter that this idea is being developed in many parts of the country, and that there is some prospect that no broadcasting program will eventually be complete without an admonition in behalf of safe driving at some appropriate moment toward the close of the game.

U.S. Supreme Court Gets Case Attacking Truck Law Of Texas

By Teletype
N. P. N. News Bureau

WASHINGTON, Nov. 8. — The U. S. Supreme Court late today took under consideration the question of whether federal certificates of public convenience and necessity, issued under the Motor Carrier Act, transcend authority of the various states to require interstate truckers to get state certificates for operation within those states.

The case was argued before the high court on appeal from the Fifth Circuit Court of Appeals. A. E. McDonald, Texas trucker, who had complied with federal certification laws, appealed to the supreme court after the lower court had upheld the right of the state to require him to get a state certificate, although his operations were in interstate commerce.

Appearing for McDonald was Lloyd Price, Port Arthur, Tex., attorney. William C. McCraw, Texas attorney general, appeared for the state.

The Interstate Commerce Commission filed a brief as *amicus curiae* contending that the certification provisions of the Motor Carrier Act superseded any such authority of the states as applied to interstate truckers. No decision is expected for several weeks. (See article beginning on page 102 of this issue for more complete discussion of this case.)

Washington Parley to Plan Wage-Hour Laws for States

N. P. N. News Bureau

WASHINGTON, Nov. 7.—Labor commissioners from 36 states will discuss here next week the tentative draft of a uniform state wage-and-hour law following broadly the principles of the federal law, which went into effect Oct. 24.

The proposed state law is being drafted now in the Labor Department here and will be submitted to the labor commissioners, meeting here Nov. 14, 15 and 16 at the call of Labor Secretary Perkins in the Fifth Annual Conference on Labor Legislation.

It will have the active blessing of Wage-Hour Administrator Andrews and his staff, whose current bouts over interpretation of "interstate" and "intrastate" employes would be considerably eased, if all the states had wage-hour laws drawn on the same scale as the federal law.

Andrews has on numerous occasions in his short tenure of federal office voiced the hope that eventually there would be state legislation on wages and hours. On one occasion he not only expressed hope, but confidence, that such laws would be passed, and before long. He had said at a press conference that an appeal would be issued to employers in intrastate businesses to comply with the provisions of the wage-hour act, and a correspondent asked:

"That would, of course, be purely voluntary compliance, would it not, Mr. Administrator?"

"Yes, of course, until we get state wage and hour laws," the administrator replied.

It is expected that the state labor commissioners meeting here next week also will discuss a state labor relations act based on the federal law (Wagner act under which the National Labor Relations Board functions) —also recommended by the federal government.

Strategy behind this recommendation of these laws to a conference of state officials, apparently, is this: If the federal government went direct to the states and said "Pass this law, or one like it," there would be back-humping, as there was in connection with demands for social security laws to fit the federal mold; but if a state's labor commissioner comes home from a discussion with representatives of 35 other sovereign states, all on an equal footing, there isn't the same feeling of having something forced down the throat—or at least that's what the strategists seem to hope.

Copies of Wage-Hour Law

Due to hundreds of calls NPN's supply of "free" copies of the Fair Labor Standards Act (federal wage-hour law) has been exhausted. But NPN will be glad to obtain additional copies from the Government Printing Office for readers desiring official copies of the law, which became effective Oct. 24.

Please send requests, with stamps in payment at 5 cents per copy, to NATIONAL PETROLEUM NEWS, 1213 West Third Street, Cleveland, Ohio.

What Employes Are Under Truck Law—ICC Seeks Answer

N. P. N. News Bureau

WASHINGTON, Nov. 7.—Interstate Commerce Commission has instituted an investigation to determine how far its jurisdiction extends to employes of motor carriers "other than drivers."

Purpose of the investigation, ICC says, is to clear up existing confusion as to provisions of the new wage-hour law and the truckers "hours of service regulations," and the line of demarcation between the two.

The wage-hour law exempts from its maximum-hour provision (but not the wage provision) all employes whose hours may be regulated by the ICC under the Motor Carrier Act. Last week, wage-hour officials announced that they would withhold a ruling on truck drivers until the commission had determined the ICC's jurisdiction (See N.P.N., Nov. 2, 1938).

ICC has prescribed "hours of service" regulations for drivers of common and contract trucks in "interstate commerce" but the effective date has been postponed, pending outcome of the hearing which opened Nov. 4, at Chicago.

The commission also has just launched an investigation of the "need" for regulating private carriers as to safety requirements which is expected to include drivers' hours of service.

Under the proposed ICC hours of service regulations, a work week of 60-hours would be permissible for employes subject to the rules, whereas the wage-hour law provides for a maximum work week of 44 hours for the first year it is in effect, 42 hours during the next year, and 40 hours from then on.

But the fundamental question to be determined is whether, in the interest of safety, the commission has power to prescribe maximum hours of service for employes *other than drivers* of common, contract and private carriers by truck in "interstate commerce."

An oral argument will be held Dec. 16 before the ICC on the matter; briefs may be filed by "any interested party" up to Dec. 10.

The portion of the commission's order outlining scope of its inquiry, reads, as follows:

"It is ordered, That an investigation be, and it is hereby, instituted by the Commission on its own motion, into and concerning the extent of the Commission's jurisdiction to prescribe reasonable requirements with respect to qualifications and maximum hours of service of employes, other than drivers, of common, contract, and private carriers by motor vehicle under section 204 (a), sub-paragraphs (1), (2), and (3) of the Motor Carrier Act, 1935, and particularly to determine whether the Commission has jurisdiction to prescribe such requirements with respect to all employes of common and contract carriers or only with respect to those employes of such carriers whose activities affect the safety of operation of motor vehicles and, if it be determined that the jurisdiction of the Commission is limited to prescribing such requirements with respect only to those employes, other than drivers, whose activities affect the safety of operation of motor vehicles, the class or classes of such employes."

'Midget' Poly Unit Started By Sunray

N. P. N. News Bureau

TULSA, Nov. 7. — Construction has started on a catalytic polymerization unit at the Sunray Oil Co.'s refinery at Allen, Okla. The unit is expected to be in operation by Dec. 1. Most of the foundation already has been poured and the furnace coils are on the grounds and the remainder of the equipment is reported en route to the plant. The contract for construction was awarded the Universal Oil Products Co. of Chicago. The unit will be of the small type. It will be operated in conjunction with the present Universal selective cracking unit at the plant. While not increasing crude throughput it will increase somewhat gasoline production with a higher octane rating.

Margins Topic For Marketing Session of API

N. P. N. News Bureau

CHICAGO, Nov. 7.—Margins will be the major topic of discussion at the American Petroleum Institute's division of marketing meeting at its nineteenth annual convention in Chicago, Nov. 14 to 18.

The marketing meeting, the first in two years, will be held in the Grand ballroom at the Stevens hotel, Nov. 17, with the Institute's vice president for marketing, C. E. Arnott, of New York, Socony-Vacuum Oil Co., Inc., presiding.

Prof. Leon A. Bosch of the Northwestern University School of Commerce, Evanston, Ill., whose address provided one of the high spots of the National Assn. of Petroleum Retailers' convention at St. Louis in September, will be one of the speakers. His subject is "Balanced Selling and Effective Merchandising."

Wilmer R. Schuh, president of the National Assn. of Petroleum Retailers, Milwaukee, will talk on "The Dealer Marketing Plan Today."

The third speaker will be Hubert B. Fuller of Cleveland, counsel for the Ohio Petroleum Marketers Assn., whose subject is, "Margins and Other Problems of Marketing." Fuller has been making a close study of certain phases of his subject for the past several weeks in order to have first hand information from which to prepare his talk. He has traveled from the Atlantic to the Pacific coast, and into the Mid-Continent area in connection with his search for data.

Time of the first general session of the institute meeting has been advanced from 2:30 to 2 p.m., Nov. 16, with Donald R. Richberg of Washington, former NRA administrator, as the first speaker.

Two special trains will be operated from New York. One of them, with a "night-club-on-wheels", will leave the Pennsylvania station, New York, at 4:40 p.m., Nov. 13, arriving in Chicago the next morning. The other special will leave Grand Central Station, at 4:20 p.m., Nov. 14, arriving in Chicago the next morning at 8:30 a.m.

7 Rules For Clean Rest Rooms Given By U. S. Health Service

N. P. N. News Bureau

WASHINGTON, Nov. 7.—The high standards which a number of oil companies throughout the country have adopted in the maintenance of their service stations' rest rooms have been recognized and commended by the U. S. Public Health Service.

The commendation, it was explained, was made in recognition of the fact that the toilet rooms operated in connection with gasoline service stations may have an important effect on the public health.

The Public Health Service at the same time outlined what it regards from a health standpoint as the primary requirements for the maintenance of station rest rooms. Its seven-point program, described as being in accord with the practices of many oil companies, is as follows:

(1) Use split-seat toilets, with surfaces of non-porous material.

(2) For cleanliness, depend solely upon thorough manual cleansing by means of soap, water and plenty of "elbow grease."

(3) Use of deodorants and disinfectants imparts a false sense of security, often substitutes one odor for another, and is considered unnecessary. In the event there is a spilling of urine around the base of the bowl or urinal, a dilute solution of formaldehyde, in addition to mechanical cleanliness, may be used at times.

Temperature Important

(4) The temperature of toilet rooms should be lower than that of living rooms, but not cold enough to chill persons using the facilities. Provision should be made for fool proof, constant ventilation.

(5) Hot running water, paper towels and liquid or powdered soap from dispensers should be supplied; a receptacle supplied for used towels. Periodic emptying of the used towels should be an important part of the service.

(6) Paper drinking cups or a bubbler should be provided *outside* of the room in which the toilet and washing facilities are provided. This enables closer supervision of these facilities and makes the drinking of water more inviting. Provisions should be made for collection and disposal of used paper cups so that an eye-sore may not be created by an untidy overflow. If a drinking fountain is provided, there should be frequent supervision and cleansing by a reliable attendant.

(7) No sanitary device or appliance is self-maintaining. Therefore, the human factor is intimately involved, and unless there is an earnest desire and intent to maintain the appliance at its required efficiency, an unpleasant, even detrimental condition will inevitably arise.

Safety Manual Lesson Saves Brother's Life

N. P. N. News Bureau

BIG SPRING, Texas, Nov. 7.—Mary Elizabeth Davis, aged 13, often read and studied the safety manual given to her father by the Continental Oil Co.

Some time ago her two younger brothers went rabbit hunting with their pet dog. When the two boys and the dog went down into a ravine in which gas had collected, the older brother, Vyrion, was overcome, and the dog died instantly. The other boy managed to scramble up the bank and fled to the Davis home, to call Mary and the neighbors.

Mary pulled her brother out of the ravine and administered first aid for 35 minutes before he was revived.

At a ceremony here Nov. 7 Mary was given three national life-saving awards, a wrist watch and copy of a commendatory resolution from the Continental's board of directors. The $150 watch was presented by J. G. Dyer, the company's vice president in charge of production.

Station Fire Kills Attendant

CLEVELAND, Nov. 8.—Cleaning a lubritorium floor with gasoline at a service station on Union Ave. near East 116th St. here, resulted in a fire which brought death today to Howard Merrill, attendant, and injured George Barucky, operator of the Station. While the cause was undetermined, it was thought that it might have resulted from static electricity, generated by rubbing the concrete floor with a gasoline-soaked rag, which ignited gasoline fumes, setting fire to the men's clothing.

How to Make Your TRANSPORTATION Operate More Cheaply

THE answer is simple and cheap—Inspect it and do it Frequently.

Use NPN Safety and Inspection Service' manual written for oil industry trucks for at least a monthly inspection.

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CIO Lewis Vs. Minnesota's Comfort

Some public officials at Washington—sometimes called "bureaucrats"—were importuned the other day to use their power to prevent the people of Minnesota from enjoying the benefits of natural gas in their cook stoves and furnaces.

The importuners insisted that what the people of Minnesota wanted had nothing to do with the case, that their likes or dislikes, their needs or their comforts, were not to be considered at all. The importuners insisted that the only people in the whole United States to be thought of in this matter were John Lewis and his coal miners. Their wishes and desires were to come ahead of those of the people of Minnesota.

The importuners were CIO Lewis' coal miners. They were addressing the new Federal Power Commission, asking it not to permit the Kansas Gas & Pipe Line Co. to sell the gas from wells and farms in Kansas to the people of Minnesota, even though the Minnesotoans want to buy it, and even though the gas producers of Kansas would like to get the money for their product and the farmers of Kansas would like to collect their royalties.

Lewis' coal miners think they can sell more coal and make more money if they can prevail on this new federal agency to tell the people of Minnesota that they can't have the gas.

It was only last winter that CIO Lewis and his coal miners fought desperately in Congress for a tax on fuel oil, so that they could send the Mothers of the country who don't have big enough sons or aren't rich enough to hire "housemen," back into the cellars to shovel coal and ashes, so that CIO Lewis' men could mine more coal and CIO Lewis could collect dues with greater ease and in greater abundance.

Did Lewis and his coal miners have anything to do with President Roosevelt's recent seemingly "helpful" suggestion to include refining in the Interstate Oil Compact?

That would be one way to reach some of the competitors of coal and to send Mother back into the cellar?—W.C.P.

A New Seismograph

In all the fanciful lore that four states dug up about his life, in trying to find which one was to collect inheritance taxes from the $36,000,000 estate of the late 315-pound Col. Edward H. R. Green, son of two-fisted capitalist Hetty Green, of Wall Street's past glories, is what one might call a new type of seismograph for discovering oil. It's a seismograph to the extent that it was founded on a shock and that it was expected to find oil, only Col. Green had never been able to make it work.

The method as developed by the late corpulent and eccentric "Colonel" was to lead a mule to where he thought oil might be and then hit it over the head with a sledge, hard enough to send it stampeding around the selected area before it dropped. The Colonel spudded in where the mule finally expired.

But neither the states of Texas, Florida, New York or Massachusetts could find where this concussion method found any oil. Massachusetts, however, got the sole right to collect the tax.

To Keep Us Out of War

AGAIN—ICKES WANTS FEDERAL OIL CONTROL

WASHINGTON, Nov. 3. — Interior Secretary Ickes said today he thought the federal government had been "remiss" for a long time in not passing "reasonable regulation" to preserve oil resources "for future generations." He added that this is particularly important now in view of steps being taken for national defense. Ickes described the Interstate Oil Compact as a "mere gentleman's agreement".

The above is quoted from PLATT'S DAILY OILGRAM of Nov. 3rd.

A few days earlier, Ickes' chief, President Roosevelt, had called Chairman Thompson of the Texas Railroad Commission to Hyde Park, to tell him the state's compact "should include refining."

Regulating the Private Truck

Two announcements of vital importance to all private motor carriers—that is, privately-operated trucks like an oil company's tank trucks—have been issued in the past few days by the Interstate Commerce Commission.

First, the ICC set hearings for January and February on the question of safety regulations for all private carriers operating in "interstate commerce" (that phrase is elastic in the hands of a governmental agency), such regulations to include qualifications of drivers, maximum hours of service, safety of operation and equipment.

Secondly, the ICC announced it was investigating to see how far its jurisdiction extends to employes *other than drivers* of motor carriers (including private carriers) under the Motor Carrier Act. One reason given for this study was the conflict of authority with the wage-hour law (truckers coming under the ICC's jurisdiction are exempted from the maximum hours—but not the minimum wages—of the wage-hour law).

So we find the ICC taking its first definite step to extend to private trucks the control it now exercises over for-hire trucks and at the same time indicating that it considers not only truck drivers but other employes of the truck owner in "interstate commerce" to be under the commission's control.

The oil industry, as well as all other industries interested, should be on guard to combat the efforts of competing carriers to have the ICC impose stringent, hamstringing regulations on their motor delivery systems.

Judge Stone Replies To Government Suit In Mandamus Action

N. P. N. News Bureau

CHICAGO, Nov. 7. — Answer of Federal Judge Patrick T. Stone to the U. S. government's mandamus proceedings seeking to have rescinded his order dismissing 11 defendants in the first Madison oil case was filed Nov. 5 with the U. S. Circuit Court of Appeals.

The brief was signed by Weymouth Kirkland, John L. McInerney and David Fisher as attorneys for Judge Stone.

The brief states that "A careful review of the entire record disclosed that there was no substantial evidence of the guilt of any of the defendants who were dismissed. As a matter of law, there was no evidence from which a jury could possibly find such defendants, or any of them, guilty of the offense charged in the indictment."

The answer also contends the government has changed its position on the question of the district court reserving its ruling on motions for a directed verdict made before the case went to the jury. The government's position during the argument on the mandamus proceedings was solely on the power to reserve ruling, the brief relates. Then a letter to Judge Stone Sept. 6 from Thurman Arnold, assistant attorney general, claimed there had been no reservation of ruling.

"The record clearly reflects the intention of respondent and the understanding of all the parties and what in fact transpired," the brief states. When considered with the order of Sept. 21, 1938, and the amendments made to the orders of Jan. 21, and July 19, 1938, it becomes apparent that the reservation was in fact made. . . The record, as a whole, when considered with what occurred prior to verdict and the procedure adopted and acquiesced in by all of the parties concerned, clearly shows that no one thought otherwise than that respondent had definitely reserved ruling on the motions for directed verdicts and that he was passing upon said motions on July 19, 1938."

Ickes and Federal Oil Control— This Time the Tune Is National Defense

By G. T. KELLOGG

N. P. N. News Bureau

WASHINGTON, Nov. 7. — Interior Secretary Ickes has added a new string to his lute.

It twangs in tune with the latest number of the New Deal orchestra—entitled "National Defense."

With all Washington talking in terms of national defense, the Interior Secretary said at his latest press conference:

"I have thought for some time the government has been remiss in not having passed a reasonable act to stop waste in oil production and to conserve oil. This is particularly true now in view of national defense plans."

From time to time, Ickes has indicated his desire for federal oil control legislation, but the awakened interest in preparedness has given him a new angle.

Ickes was questioned at the conference by newspapermen about the recent discussion between the President and Col. Ernest O. Thompson relative to broadening the interstate oil compact to include refining.

"I think first of all," he replied, "the compact should be made effective to do anything, which it is not now—it's merely a gentlemen's agreement."

Ickes then said that the compact could not be made enforceable "any more than you could make the Articles of Confederation under which we tried to operate prior to the Constitution enforceable."

"What real good is the compact?" Ickes was asked.

"That is the question I am asking," he replied. "That is the reason I say that they ought to make the compact effective as to the subject matter it now covers before they try to expand it."

Asked what he would suggest, Ickes said:

"You can have federal regulation."

A correspondent then asked the secretary if he was going to recommend amendment of the Connally "hot" oil act when it comes up for renewal at the coming session. The Secretary said he did not know "whether it ought to be in the form of the Connally Act or whether there ought to be a new bill passed." He added he wasn't prepared to recommend any federal regulatory act "at the moment," but said the bill drafted by the department and introduced several years ago was one whose "principles were sound."

Oil's WASHINGTON CALENDAR

Below are given the dates and notices of hearings, proceedings, new legislation, etc., which are of importance to oil companies. Notice is also given of regulations issued, interpretations of laws, new publications, etc., with information as to how readers may secure official copies of these.

Hearings:

Interstate Commerce Commission:

Nov. 9—Reopened pipeline rate case (Docket 26570).

Nov. 15—Application to cut gasoline freight rates from Savannah and Port Wentworth, Ga., to Augusta, Ga., because of barge competition. (Atlanta.)

Nov. 21—Proposed rules for trucking of explosives and inflammables.

Nov. 28—Protests of Gulf Pipe Line Co. of Oklahoma, Gulf Pipe Line Co. of Pennsylvania and pipeline division, Gulf Refining Co. of Louisiana, against tentative valuation of properties.

Nov. 30—Complaint of Standard Oil Co. of Louisiana against rail freight rates to midwestern points (at New Orleans).

Dec. 1—Protest of Standard Pipe Line Co. against tentative valuation of its properties.

Dec. 1—Railroads proposal to cut rates from New Orleans-Baton Rouge Group points to Tennessee River points (at Memphis).

Jan. 9—First of series of hearings on question of need for safety regulations for private truckers (Washington). Further hearings as follows:

Jan. 12—New York City
Jan. 16—Chicago, Ill.
Jan. 19—Minneapolis, Minn.
Jan. 23—Spokane, Wash.
Jan. 25—Portland, Ore.
Jan. 30—Los Angeles, Calif.
Feb. 3—Omaha, Nebr.
Feb. 6—Memphis, Tenn.

Arguments:

Interstate Commerce Commission:

Dec. 15—To determine extent of ICC jurisdiction over employes (other than drivers) common, contract and private truckers.

Labor Department:

Nov. 14, 15 and 16—Fifth Annual Conference on Labor Legislation, with particular emphasis this year on state wage-hour laws and labor relation laws.

O'Mahoney Monopoly Committee:

Nov. 21 (tentative)—Inquiry into extent of monopolistic control of business.

Dec. 15 (tentative)—Oil witnesses called to testify.

(ICC hearings, at place designated, on oil trucker applications for extension of operations in states shown).

Dec. 5—Denver, John J. Godfrey, permit, Colo., Wyo., Kans.

Dec. 5—Denver, J. J. Stanton Transportation Co., certificate, Wyo., Colo.

Dec. 6—Oklahoma City, W. R. Stramp Truck Line, certificate, Okla., Kans.

Dec. 6—Denver, L. R. Martin, permit, Kans., Colo.

Dec. 8—Denver, R. E. Ensminger & Ensminger, certificate, Colo., Nebr., Kans.

Dec. 10—Denver, B. L. Austin, permit, Kans., Nebr., Colo., Wyo.

Dec. 13 — Lincoln, Nebr., Eaton's Transport Co., permit, Nebr., Kans., Wyo.

Dec. 20—Gallup, N. Mex., Louis Usnik, permit, N. Mex., Ariz.

Dec. 20—Gallup, N. Mex., Fletcher J. Allison, permit, N. Mex., Ariz.

Feb. 10—Amarillo, Tex., John Lawton Thomas, permit, Tex., Okla., Colo.

Feb. 27—Los Angeles, Lang Transportation Corp., certificate, Calif., Ariz., Nev., Utah.

March 4—Los Angeles, Field Transportation Co., certificate, Calif.

March 11—Los Angeles, Belyea Truck Co., certificate, Calif.

New Bulletins:

Wage-Hour Act available at Superintendent of Documents, Washington, at 5 cents (cash, no stamps) per copy.

Texas Pipe Line Co. 'Valued Too Low'

WASHINGTON, Nov. 8. — Contending that Texas Pipe Line Co.'s used-but-not-owned facilities as of Dec. 31, 1934 should be increased in value by $250,000 by Interstate Commerce Commission in its valuation report, attorneys for the company argued before an ICC examiner today that tanks of that value which were being used at that time (owned by The Texas Co.) had since been purchased by the pipeline company because of their necessity to common-carrier operation.

The docket was reopened on petition of the pipeline company, following establishment by ICC of value of properties used for common carrier purposes at $3,250,000. If contentions of company are granted, the $250,000 value of tanks will be added to this figure. Dec. 31, 1934 is date of valuation under valuation orders of late 1934.

Oil Truckers Plan Meeting On ICC Safety Regulations

DETROIT, Nov. 7. — Members of the Petroleum Carriers Division of the American Trucking Assn., which convened here last week, will meet in Chicago during the American Petroleum Institute convention, Nov. 14-18, to draw up a final recommendation to submit to the Interstate Commerce Commission when that group holds a hearing in Washington Nov. 21 on its proposed third draft of safety regulations for trucks hauling "dangerous" articles, including gasoline, in interstate commerce.

The petroleum carrier group, in its Detroit meeting, discussed at length the report which the California petroleum transporters presented at the ICC hearing in Los Angeles Oct. 10-11, and are expected to back the west coast motor carriers' recommended changes, as well as some additional alterations of their own.

Charles J. Yokom, of Detroit, Overland Transportation Corp., was re-elected chairman of the Petroleum Carriers Division of the A.T.A. during the convention here last week.

Other officials are A. T. Smith, of San Jose, Calif., Pacific Truck Service, Inc., vice-chairman; M. L. Wilcox, of Dowington, Pa., Lehman Transportation Co., treasurer; and C. Austin Sutherland, of Lincoln, Neb., secretary of the United Transporters of Petroleum Products and publisher of the Petroleum Transporter, secretary.

Yokom as chairman of the Petroleum Carriers Division automatically becomes a divisional vice-president of the A.T.A.

Organization plans of the division call for provisions to enable enrollment of petroleum carriers throughout the country from among those who are members of affiliated associations as well as from those who are not members.

The program for the coming year (the division was organized at the A.T.A. convention in Louisville, Ky., a year ago), is primarily one of organization, plus development of plans for an extensive public relations program and gathering of information on accident and performance records of petroleum carriers.

The four officials of the division are to meet in Chicago Nov. 17 to adopt a definite plan for the coming year.

Oil Man Elected Chairman of Private Carrier Group

WASHINGTON, Nov. 7.— John A. Hassey, Boston, of Cities Service Oil Co., was elected chairman of the Private Carrier Division of American Trucking Associations, Inc., at the A. T. A. national convention in Detroit last week, according to an announcement by A. T. A.

Three Oil Truckers Honored For Safety

N. P. N. News Bureau

WASHINGTON, Nov. 7. — Three truckers of petroleum products were among the nine motor carriers to be added to the trucking industry's safety roll of honor at the fifth annual convention in Detroit Oct. 28-Nov. 3 of American Trucking Associations, Inc.

They are Sprague Oil Service, McPherson, Kans.; Kaw Transport Co., Kansas City, Mo., and Hugh Breeding Transport, Inc., Oklahoma City.

Judges in the contest, sponsored by A. T. A., in which the safety winners were chosen were:

H. H. Kelly chief of safety section, Bureau of Motor Carriers, Interstate Commerce Commission; A. B. Barber, manager of transportation, U. S. Chamber of Commerce; Norman Damon, executive secretary of Automotive Safety Foundation; Dawes E. Brisbine, research counsel, National Highway Users Conference, and W. A. Cameron, chief safety adviser, Division of Labor Standards, Department of Labor.

Each year the A. T. A. selects a group of truck companies to receive safety awards at its annual meeting.

In addition to the nine "top flight" truckers, awards of honor were given six other truckers, one of whom, R. E. Ensminger, Holyoke, Colo., is a petroleum carrier.

Awards of merit were given some score of other truckers, and trucking units of oil companies, among them Diepen & Rowan, San Jose, Calif.; L. D. Fox, Grants Pass, Ore., and Standard Oil Co. of New Jersey, Standard Oil Co. of Louisiana, Standard Oil Co. of Pennsylvania, and Colonial Beacon Oil Co.

Sunday Ban on Trucks In Pennsylvania?

HARRISBURG, Pa., Nov. 7. —Both houses of the Pennsylvania legislature have adopted a resolution authorizing the Pennsylvania Motor Police to conduct an investigation in regard to restricting heavy truck traffic on the state's highways on Sundays and holidays.

Here's One for the Books— ICC Finds Rails Cut Rates Too Much

N. P. N. News Bureau

WASHINGTON, Nov. 7. — Here is a freight rate story almost as rare as a story about a man biting a dog.

With railroads seeking Interstate Commerce Commission authority almost daily to whack their rates to meet competition of barges and trucks, the commission has ordered an increase in certain rail rates because when they were lowered, pursuant to a commission order, they were dropped so low that they went far below the barge rates they were to "meet."

The rates are those applying to gasoline and kerosine from New Orleans-Baton Rouge Group points, and Mobile, to Montgomery and Selma, Ala. Last year they were cut, on railroad application, to 18.5 cents per 100 pounds from Group points, and 15 cents from Mobile, along with rates to other river ports in Alabama. The rails contended at this time that barge traffic on the Alabama River (on which Montgomery and Selma are located), and the Tombigbee and Black Warrior Rivers was taking away their tonnage in gasoline and kerosine.

Then Pure Oil Co., which barges on the Alabama River, petitioned to have the case reopened with respect to Selma and Montgomery, asserting that the barge cost to these points "greatly exceeds" the 18.5 and 15 cent rates. Navigation on the Alabama River is much more difficult, the Pure company pointed out, than on the Warrior and Tombigbee, because of the difference in depth.

So the case was reopened, new hearings held, and the ICC's latest order, effective Dec. 10, increases the minimum rate on gasoline and kerosine from Mobile to Selma and Montgomery to 16.5 cents, and from Group points to 20 cents.

Several States Plan Stricter Truck Control

MINNEAPOLIS, Nov. 7. — Hearing on the recent order of the Minnesota Railroad and Warehouse Commission which in effect limits transport truck capacities to 2000 gallons has been postponed to Dec. 12 at the request of petroleum carriers who said they needed more time to prepare their case.

Hearing was set for Nov. 2 and some testimony was taken then to accommodate a transporter who attended from the far northern part of the state. This was a transporter from Tofte, who operates a 3000-gallon transport from a Duluth marine terminal as far as Grand Marais on Lake Superior's north shore. Of the 110 mile haul, 85 miles is in territory not served by a railroad.

Before the second witness took the stand the postponement was sought and granted.

The Commission's order was issued in late September. This was just before a hearing on an application of rates for a transporter to haul from a Minneapolis marine terminal.

Transporters now are operating under special permits, pending the forthcoming hearing on the order.

* * *

Fight Looms Over Payload In North Carolina

RALEIGH, N. C., Nov. 7.— North Carolina Firemen's Assn. will sponsor a bill at the session of the North Carolina legislature opening in January to limit the size of tank trucks permitted on the state's highways, according to reports here.

While no actual size limit has been mentioned as the new "safety" standard with which gasoline tank trucks will have to comply, the report is that an attempt will be made to "greatly" reduce the size. At present transport tank trucks hauling 4,000 gallons are operating on the highways—with safety.

Railroads in the southeastern states have been waging a bitter fight for several years to recover oil tonnage lost to transport trucks hauling from marine terminals to inland distribution points.

* * *

Seek Hike In Vermont Truck Fee

MONTPELIER, Vt., Nov. 7.— A sharp increase in truck registration fees to offset a corresponding reduction in railroad taxes is one of the moves which truckers and other highway users in Vermont will probably

be called upon to battle in Vermont's legislature this winter.

It is said that the Rutland Railroad, state-owned and bankrupt, is leader in the movement which would make the trucks bear the burden of keeping the profitless railroad operating.

But at the same time, rail interests are also said to be considering a drive for legislation drastically curtailing truck sizes and weights so as to rule many vehicles which are now operating off the highways.

ICC Orders Hearing In Rail-Barge Fight On Rate to Augusta

N. P. N. News Bureau

WASHINGTON, Nov. 7.—Hearings will be held in Atlanta, Ga., Nov. 15 on the application of southeastern railways to establish new barge-competitive rates of 10.5 cents per 100 pounds—the present rate is 17 cents—on gasoline and kerosine from Savannah and Port Wentworth, Ga., to Augusta, Ga., Interstate Commerce Commission has announced.

Meanwhile, ICC has granted the rails temporary authority, pending outcome of the hearing, to publish the new lower rates. Barge movement of gasoline on the Savannah river increased from 137,000 barrels in 1936 to 169,000 barrels in 1937, according to figures compiled by the Army chief of engineers' office. Pure Oil Co. operates a barge line on the Savannah as far as Augusta.

In their application for the reduced rates, the railroads stated:

"The barge line rate, including terminal charges from Port Wentworth and Savannah, Ga., to August, Ga., is approximately 7 cents per 100 pounds, or approximately 10 cents per 100 pounds less than the rail rate.

"The shippers using rail service from Savannah and Port Wentworth are chafing under this wide differential against them, and the applicants are reliably informed that such shippers have been approached to add their gallonage to the gallonage already being transported by barge to Augusta. The resultant increased volume would decrease the present barge costs and this added to the planned enlargement of storage facilities at Augusta would cause the rail lines to lose the movement, which is substantial in volume, to Augusta proper.

"Additionally, a reduction in barge costs from Savannah and Port Wentworth to Augusta would in all probability result in the rail lines losing to barge and truck combinations on Augusta a large proportion of the gasoline and kerosine which is now shipped by rail to destinations in the vicinity of Augusta, in the states of Georgia and South Carolina."

Truckers Tell ICC Hearing 10-Hour Day Is 'Too Short'

N. P. N. News Bureau

CHICAGO, Nov. 7. — Witnesses have been parading before Examiner R. W. Snow of Interstate Commerce Commission, here for several days, and it appears that they will continue through this week, testifying on proposed hours-of-service regulations drivers of for-hire trucks operating in interstate commerce.

Originally scheduled to become effective Oct. 1, the ICC postponed the effective date until Dec. 31, pending a rehearing granted to protestant truckers.

Points involved in the rehearing are provisions in the Commission's order for a 10-hour work day, the form of driver's log, and rest periods over 20 minutes being deducted from driving time.

Examiner Snow's opening announcement cast up the apparent issues. Testimony of early witnesses, West Coast petroleum transporters, confirmed the examiner's summary of issues, and resulted in suggestions for a 12-hour day for truck drivers.

The hearing is likely to continue through this week, but Examiner Snow's opening statement indicated progress will be brisk and the order originally set for Oct. 1 will become effective "if humanly possible" on Dec. 31.

Testimony from petroleum carriers opened the rehearing. The examiner announced testimony of passenger and bus carriers would be heard Nov. 10. Private carriers are not involved in this rehearing.

The current hearing is the third before the Commission to establish hours of service for contract and common carriers under the Motor Carrier Act. After original hearings the report was for a 15-hour day. Labor objected. A hearing before the entire Commission resulted in an order being issued for a 10-hour day. Now carriers are objecting, seeking a longer work day, deductions for time at all stops, and a simplified form of a driver's log.

Part of the commission's order is a 60-hour week on duty. Examiner Snow noted that this point apparently is not at issue in this rehearing as no complaints had been filed against this maximum work-week.

Some of the petroleum carriers came to the rehearing last week from the American Trucking Association annual convention earlier in the week at Detroit. Two of the early petroleum carrier witnesses were Clarence Garrett, of Pocatello, Idaho, the Garrett Transfer and Storage Co., and L. R. Guerra, of Richmond Highlands, Wash., traffic manager of the Arrow Transportation Co.

The early testimony followed much the same general pattern. Witnesses told about operating details of transporting petroleum inland from Pacific Coast loading points, with records of various runs. Garrett testified about the three-division trip from Los Angeles to Salt Lake City, showing normal elapsed time of runs varied from eight to over 11 hours. Guerra testified to hauling over three divisions from the Pacific northwest to Boise, Idaho, showing some runs around and over 10-hours.

Both witnesses spoke of weather conditions in the summer and winter requiring more than normal time for a safe trip, estimating of additional time from one to two hours. Speeding up runs to enable a driver to complete his portion of a trip within 10-hours was not advisable, both witnesses testified, on account of the additional danger to highway safety, and damage to equipment.

Other difficulties in coming within a 10-hour day noted by the witnesses was in re-arrangement of schedules, and changing division points through finding towns with suitable living conditions for the drivers.

Slash In Rail Rate Sought For Greases

N. P. N. News Bureau

WASHINGTON, Nov. 7.—Contending that rail freight rates for lubricating greases should be the same as for lubricating oils, since the "transportation characteristics" are similar, Radbill Oil Co., Philadelphia, has filed a complaint with Interstate Commerce Commission asking an investigation into rates charged by railroads from points in Official Classification Territory to points in Western Trunk Line Territory.

Rates charged on lubricating greases in straight carloads or lubricating greases and oils in mixed carloads have been and are 37.5 per cent of first class rates, the complaint asserts, whereas rates for straight carloads of lubricating oils are 32.5 per cent of first class.

This differential is "unjust, unreasonable, excessive, and discriminatory" the complaint charges, since some shippers are not able to ship straight carloads of lubricating oils to get advantage of the lower rate.

S.A.E. Transportation Meeting Listed For Week of New York Automobile Show

NEW YORK, Nov. 7.—Coincident with the 1939 automobile and truck shows to be held here Nov. 11 to 17, the Society of Automotive Engineers has scheduled its National Transportation Engineering Meeting to be held at the Hotel New Yorker, Nov. 14 to 16.

Two papers will be presented on the opening day of the meeting. F. S. Baster, of the White Motor Co., will speak on "Why Not 125 B. M. E. P. In Ell-head Truck Engines?" M. C. Horine, of the Mack Mfg. Co., will present a paper on "Tire Sizes—Not More But Better."

On Nov. 15 diesel-electric bus drives will be discussed by G. W. Wilson, of the General Electric Co., and a joint paper on "Instrumentation for Maintenance and Test Procedure of Electrical Equipment" has been prepared by W. H. Yenni, of Joseph Wiedenhoff, Inc., and W. A. Roberts, of the Rappuhn Corp.

A paper on "New Kinks in Live Truck Operation," will be presented Nov. 16 by Henry Jennings, of Commercial Car Journal. N. E. Hendrickson, of the Mather Spring Co., will speak on "Trends in Commercial Vehicle Spring Suspension."

The program has been arranged by the Transportation and Maintenance, and the Truck, Bus and Railcar Activities of the society, headed by SAE Vice Presidents F. L. Faulkner, of Armour & Co., and H. E. Simi, of the Twin Coach Co.

Freight Rates For Southeast To Be Slashed

(Continued from page 17)

Mississippi destinations from Arkansas refining points.

Southwestern Freight Assn. had an informal proposal that the reduced rates, now in effect from the New Orleans-Baton Rouge Group to points in Tennessee and Mississippi, be applied also to shipments originating in Arkansas. At a hearing recently this proposal was opposed by two major companies having refineries in the New Orleans-Baton Rouge Group.

Proposal Vetoed

Word from St. Louis today indicates that the southwestern association has vetoed the proposal and that it is dead unless the southeastern rail carriers, representetd by the Southern Freight Assn., show some interest in it.

Meanwhile, there are reports that the railroads, threatened with the building of a huge marine terminal at Chattanooga on the Tennessee river, in the heart of the TVA project, have agreed to ask the Interstate Commerce Commission for a 21-cent rate from the New Orleans-Baton Rouge Group to Chattanooga. Present Chattanooga rate is 47 cents. The rails also will amend their pending fourth section application, now filed with the ICC, to make the 21-cent rate applicable also to other river ports on the Tennessee river, it is understood. No reductions are planned from west-of-the-river refining points.

Independent refiners in the Shreveport area are said to be planning a fight for "equalization" when the Tennessee river case comes up for hearing in December before an ICC examiner. Originally set for hearing Dec. 1, it is understood that the rails will ask that it be postponed until Dec. 15.

Texaco Launches "Insulated" Oil

N. P. N. News Bureau

NEW YORK, Nov. 7.—As the 1939 automobiles begin to poke their noses into the nation's highways, there is a growing feeling in many quarters that the new engines will develop higher temperatures than these in the older model cars.

Car manufacturers are making persistent efforts to produce quieter and smoother running engines, and to continually cut down on gasoline and oil consumption. Closer tolerances between pistons and cylinder walls, together with the new hood and radiator grille designs which restrict the amount of air available for cooling the radiator coils, will bring engine temperatures to a point where future oils will require heat resisting properties to an extent heretofore unneeded.

Oils unable to withstand high temperatures will break down, it is claimed, with the result that an injurious varnish is formed on the cylinder walls.

The Texas Co. has already introduced two new oils which are claimed to be "insulated" against heat. According to the company's announcement of a few days ago, it has "evolved a revolutionary new process for insulating oil against the effect of the intense heat of the higher speed engines of today."

The announcement continues, stating that in older cars, when parts degenerate, their surfaces become less smooth and the job of lubrication correspondingly more difficult. It appears that engine heat, always a popular laboratory subject, has now moved from the laboratory onto the open road. That it will be a favorite current topic of discussion wherever automotive and lubrication engineers meet, now seems a certainty.

Rails Plan 21-Cent Rate to Chattanooga

By Teletype
N. P. N. News Bureau

WASHINGTON, Nov. 8. — Railroads are planning to amend their fourth section application, now on file with the Interstate Commerce Commission, to reduce their rates to Alabama river ports from the New Orleans-Baton Rouge Group to meet threatened barge competition on the Tennessee river, it was learned here today.

In addition to the four Alabama destinations — Sheffield, Decatur, Guntersville and Florence, the rails will ask that the ICC also allow them to include Chattanooga, Tenn. in the rate-cut application. A blanket rate of 21 cents per hundred pounds on gasoline and kerosine is to be proposed to Chattanooga (present rate 47 cents) and the four Alabama points, instead of the 25-cent rate in the petition now on file.

In justification of the proposed cut — more than 50 per cent for Chattanooga — the rails are expected to cite plans of one major company to build a huge marine terminal at Chattanooga, which is in the heart of the TVA project.

Illinois May Reach 100,000 Bbls. Daily By January 1, 1939

N. P. N. News Bureau

TULSA, Nov. 5.—The new oil producing fields in Illinois will exert even greater influence on the general crude oil market situation in the southwest in coming months. The brisk pace of development there continues, as is indicated by the starting last week of 152 new wells in the several active pools of the central basin of Illinois.

An executive with a Mid-Continent oil company who is in close touch with Illinois developments predicts that production will increase by at least 25,000 barrels daily over the next few weeks and that 100,000 barrels will be reached before the end of 1938. His estimate is made on fields discovered in the past two years; the old fields of the state produce only 11,000 to 12,000 barrels daily.

The prediction of increase is based more on greater takings from wells now completed than on results of new drilling. The Central States Pipe Line Co. (The Texas Co.) is expected to have its new 73-mile, eight- and 10-inch line from Salem to Lawrenceville in operation by Nov. 12.

Globe Oil & Refining Co. is arranging to strengthen its position as a purchaser. Magnolia Petroleum Co., already a producer in the area, is constructing a gathering system and will soon be a purchaser supplying crude to the refinery of the Lubrite division of Socony-Vacuum Oil Co. Inc., at East St. Louis. Another major company is expected to start buying oil soon for the account of one of its refineries hitherto supplied from the Mid-Continent.

Existing pipeline systems provide the means of moving Illinois oil to the St. Louis and Chicago refining areas, in addition to the outlets in Ohio which heretofore have taken most of the new fields' output.

Premium Fuels Gain Indicated For 1938

NEW YORK, Nov. 7.—A steady increase each year in Ethyl gasoline gallonage since the low of 3 per cent of total in 1934, has brought the present sales ratio up to approximately 7 per cent, the Ethyl Corp. announced recently.

Considering the fact that the percentage of Ethyl used in fields other than passenger cars is small, the corporation reports, leads to the estimate that well over 10 per cent of all passenger cars today are using that premium motor fuel.

Total Ethyl gasoline sales for 1935 were 11 per cent above the 1934 total, while the 1936 total was 26 per cent above 1935. The 1937 gain was 35 per cent over 1936, and for the first six months of 1938, the corporation reports, the total is 30 per cent ahead of the same period in 1937.

An increase in advertising and promotion campaigns for Ethyl gasoline of some oil companies and higher compression ratios in the newer passenger car motors, together with the general economic improvement since 1934, are listed as contributing to the gain in Ethyl gallonage.

A substantial number of oil companies, it was reported, already have over 10 per cent of total gasoline sales in the Ethyl grade. On a territorial basis, it was said that in Canada, New Hampshire, Vermont, West Virginia and the District of Columbia, Ethyl sales account for approximately 20 per cent of total sales of companies holding Ethyl licenses. Percentages in Connecticut, Massachusetts, New Jersey, New York, Pennsylvania, Rhode Island, Kentucky and California are not far behind, it is stated.

State Definitions of Motor Fuel

N. P. N. News Bureau

TULSA, Nov. 7. — Definitions of motor fuels as contained in the motor vehicle fuel tax laws of various states have been condensed into a mimeographed 15-page supplement to the Western Petroleum Refiners Association's Digest of State Inspection Laws Relating to Petroleum Products, and is being mailed to the association's membership. The definitions are so arranged that the supplement will be useful in determining taxability of gasoline, kerosine, diesel fuel and other petroleum products in each of the states.

Distillation Problems Discussed

NEW YORK, Nov. 7. — Technical problems relating to fractional distillation of petroleum and its products and their solutions were discussed at a meeting Oct. 17 and 18 in New York, sponsored by the Petroleum Distillation Corp., for the technical staffs of its licensees and owner companies. Nineteen representatives were present.

Five technical papers were read and discussed. The success of the meeting has resulted in plans being made for additional sessions, the dates to be announced in the near future.

Small Producers Will Tell Their Story to the Public

N. P. N. News Bureau

TULSA, Nov. 7.—Other divisions of the oil industry and the general public itself are going to know more about the independent producers of the country, their current problems and what they have contributed, in the finding of the oil supplies underground, to the great growth of the oil industry.

The first step has already been taken in the program to take the story of the independent producer to the public, as adopted by the Independent Petroleum Assn. of America at its convention here Oct. 19-21.

The report of the association's public relations committee, as presented at the convention, pointed out that the sympathetic understanding of the public and of public officials was necessary if the rights of independent producers were to be recognized and their interests protected.

The man who is to direct the program is Lawrence E. Smith, who has been a member of NATIONAL PETROLEUM NEWS editorial staff for 18 years and for most of that period has been in charge of its Mid-Continent news bureau. Smith is severing his connection with NPN to take up his new line of work Nov. 15.

The scope of the proposed educational program was set forth in the report of the Independent Petroleum Assn.'s public relations committee, chairman of which is Burdette Blue of Bartlesville, Okla., president of the Indian Territory Illuminating Oil Co.

"The public should be told of the part the independent producer has played in the development of this industry, which produces a product so necessary to the industrial and social life of our nation," stated the report. "Looking back over the history of the oil industry we find that it has been the small independent operators who have discovered most of the major pools. It has been the little fellow in the business who in many cases has gambled his entire fortune in the wildcat operations necessary to discover the new pools which have made possible an adequate supply of petroleum to meet the needs of the nation.

"It should further be shown that such independent producers are dependent largely upon the major integrated companies for a market outlet for their raw product and that the price the producer receives for his oil is determined by the purchaser.

Doesn't Set Price

"It should further be shown that the price of crude oil is not based upon the cost of production but is determined by circumstances and conditions over which the producer has no control. It is important that we make known the number of producers, employes, and royalty owners who are dependent upon the oil industry for all or part of their incomes, and that the economic security of all of them is directly dependent upon a compensatory price for crude oil. Also comparisons should be made showing the great reduction in the consumer cost of gasoline and petroleum products during the last 10 years."

The Independent Petroleum Assn. of America has in its membership a large number of independent oil producers in all of the oil producing states of the U. S. It was organized nine years ago by a small group of independents led by the association's former president, Wirt Franklin, an Oklahoma operator.

The organization has grown steadily until it is recognized now as the largest independent producers' association in the country. It has maintained its headquarters in Tulsa.

The plan for accomplishing the educational work as recommended also was outlined in some detail by the public relations committee. A series of pamphlets containing the information that has been developed is suggested as the first step, these pamphlets to be placed in the hands of all those interested as well as those the association desires to interest. From the pamphlets should be developed a handbook containing the association's statement of its case in full, it is said.

The next step, the committee recommended, would be the use of the association's own magazine, house organs of the various member companies, trade magazines, slips in pay and royalty check envelopes and passout folders for service station, together with newspapers, to tell the producer's story.

Formation of a bureau of volunteer speakers also is recommended, the speakers to appear before civic clubs and the industry's meetings throughout the country.

A series of letters designed to sell its own members on the plan and pamphlets designed to sell the employes of its members and a campaign of education through popular magazines and over the radio also are suggested.

The association's formal announcement regarding Mr. Smith's employment follows:

"The Independent Petroleum Assn. of America announced that Lawrence E. Smith will join the staff of the association on Nov. 15 to assist in the development of the Petroleum Research Bureau suggested in 1937 by the Public Relations committee and outlined in greater detail by that committee at the annual convention here, Oct. 19 to 21.

"The public should be told of the part the independent producer has played in the development of this industry which produces a product so necessary to the industrial and social life of our nation," the Public Relations committee said in its recent report.

"Mr. Smith comes to the association from long service as a writer on oil. For the past 12 years he has been in charge of editorial work in the Mid-Continent for NATIONAL PETROLEUM NEWS. It was in this period that a great part of today's oil industry conservation program has been brought to realization and practically all of the effective conservation laws have been enacted by the several states. It was part of Mr. Smith's duties to report the development of this program, largely initiated by the independent producers. Incidentally, he was present at the organization meeting of the Independent Petroleum Assn. of America in June, 1929.

"Mr. Smith is native to the southwest. His father made the historic "run" into the Cherokee Strip in 1893. Thus, he has seen the development of Oklahoma from the days of the sod house. He attended the public schools of Oklahoma and the University of Kansas, taught a country school, worked as reporter and editor on several daily newspapers. He served for sixteen months in the army during the Great War and in 1920 began writing on oil. He has been engaged continuously in that work to the present.

A wide acquaintance in the industry naturally has been developed by Mr. Smith in these years of oil reporting. He has "covered" developments in every producing state of the United States and has visited the producing areas of Canada. He has appeared on the programs of oil associations and technical societies within the oil industry. On some occasions he has addressed these societies in his role of the whimsical Ellick Botts, the Consulting Pumper, Grayhorse, Okla.

Planning Group To Meet Nov. 11

N. P. N. News Bureau

TULSA, Nov. 7.—Consideration of the various issues brought before the recent convention of the Independent Petroleum Assn. of America here but on which action was deferred, will be laid before the Special Study Committee of 36 at its initial meeting at Fort Worth Nov. 11. The meeting will be in the Fort Worth club, Charles F. Roeser, president of the association has announced.

The special committee was authorized after the association's resolutions committee had recommended such a step in view of the importance of the issues involved in various resolutions that has been proposed at the association's recent annual convention in Tulsa.

Among the issues which the resolutions committee believed should be given more careful study before action by the membership, were those relating to pipe line divorcement, complete disintegration of all integrated companies, temporary prohibition of all imports of petroleum and its products, a recommended total shut-down in all oil producing states having regulatory bodies and an umpire to make allocations that are enforcible between oil producing states.

The association's president and executive committee also were authorized to submit any other questions to the committee deemed adviseable.

President Roeser accordingly has suggested for study the proposal for refinery regulations through the interstate oil compact. Col. E. O. Thompson, chairman of the compact commission and of the Texas Railroad Commission, made the proposal to the Independent Petroleum Assn. Oct. 20 following a visit to President Roosevelt at Hyde Park.

President Roeser announced the following had been named on the Special Study Committee of 36:

Wirt Franklin, Wirt Franklin Pet. Corp., Ardmore, Okla., chairman; Ralph T. Zook, The Sloan & Zook Co., Bradford, Pa.; E. H. Moore, E. H. Moore, Inc., Tulsa; George A. Hill Jr., Houston Oil Co., Houston; E. C. Moriarty, Derby Oil Corp., Wichita, Kans.; E. B. Reeser, Barnsdall Oil Corp., Tulsa; L. H. Prichard, Anderson-Prichard Oil Corp., Oklahoma City; W. G. Skelly, Skelly Oil Co., Tulsa; Alf M. Landon, independent producer, Topeka, Kans.; K. S. Adams, Phillips Petroleum Corp., Bartlesville, Okla.;

Frank Buttram, Buttram Petroleum Co., Oklahoma City; Jake Hamon, independent producer, Ardmore, Okla.; J. A. Aylward, Aylward Drilling Co., Wichita, Kans. J. S. Bridwell, Bridwell Oil Co., Wichita Falls, Tex.; C. A. Lester, Lester & Duffield, Inc., Dallas; E. B. Shawver, Wichita, Kans.; John E. Farrell, Farrell & Co., Fort Worth; Ralph B. Lloyd, Los Angeles; P. E. Taggart, Bridgeport, Ill.; James C. Graves, Saginaw, Mich.; Joe K. Mahony, El Dorado, Ark.; Earl D. Wallace, Lexington, Ky.; A. E. Johnson, Denver; W. S. Hallanan, Charleston, W. Va.; A. E. Secligson, San Antonio, Tex.; Winston P. Henry, Houston; George N. McCabe, Cut Bank, Mont.; J. C. Hunter, Abilene, Tex.; C. A. Johnson, Los Angeles; Judge R. F. Foster, Fort Worth; S. A. Guiberson Jr., Dallas; Capt. B. A. Hardy, Shreveport, La.; Carl Schwym, Cygnet, O.; Al Buchanan, San Antonio; Van S. Welch, Artesia, N. M., and Amos Beaty, New York.

W.P.R.A. Committee To Meet In Chicago

TULSA, Nov. 7.—The committee of independent refiners named by the Western Petroleum Refiners Assn. to study the proposal that refining be brought into the Interstate Oil Compact, is expected to meet at Chicago during the American Petroleum Institute's convention next week. The original plan was for the committee to meet with the Independent Petroleum Assn. of America's Special Study Committee of 36 at Fort Worth, Nov. 11. The refiners' committee is composed of eight Mid-Continent and Gulf Coast operators.

New Gasoline Plant In Southwest Texas

N. P. N. News Bureau

TULSA, Nov. 7.—A new natural gasoline plant to handle approximately 60,000,000 c.f. of gas daily is being constructed in the Agua Dulce field of southwest Texas by F. C. Henderson, according to an announcement by his associate, J. Wood Glass of Nowata. The plant is expected to be in operation within 60 days. Construction cost is estimated at $375,000.

The gas will be compressed at 1200 pounds pressure and the dry gas will be returned to the oil producing sand. Approximately 48,000 gallons of gasoline daily will be the plant's capacity, Wood said.

Kerr Is Re-Elected By Producers' Group

N. P. N. News Bureau

TULSA, Nov. 7. — Robert S. Kerr, Oklahoma City producer, was re-elected president of the Mid-Continent Oil & Gas Assn., Oklahoma-Kansas division, for the fourth term when that organization held its business meeting at its headquarters in Tulsa Nov. 3.

Other officers, also re-elected for a fourth term, were: Frank O. Prior, Stanolind Oil & Gas Co., Tulsa, vice president; A. W. Ambrose, Cities Service Oil Co., Bartlesville, vice president for northern Oklahoma; Lloyd Noble, Ardmore, vice president for southern Oklahoma; W. R. Wallace, Magnolia Petroleum Co., Oklahoma City, vice president for western Oklahoma; T. C. Johnson, Wichita, vice president for western Kansas, and Carl Weiner, Chanute, vice president for eastern Kansas.

The directors re-elected Clarel B. Mapes secretary and treasurer, a position he has held since 1933.

Two former active workers in the association were honored at the business meeting with life membership certificate awards. They were, Frank Haskell, the association's first president when it was organized 21 years ago, and James A. Veasey, who retired Nov. 1 as vice president and general counsel for Carter Oil Co.

Committee chairmen's reviews of the organization's activities the past year concluded the meeting.

Semi-Centennial Meeting of Geologists Planned

NEW YORK, Nov. 5.—V. R. Garfias and Luther B. Snider of Cities Service Oil Co., and Dr. Joseph E. Pogue, vice president of Chase National Bank, are members of the general committee in charge of the semi-centennial meeting of the Geological Society of America in New York, Dec. 28-30.

Fifty years of progress in the science of geology will be celebrated by this society and four associated societies which are holding annual meetings as part of the program. More than 100 scientific papers will be delivered, the subjects of which have not yet been announced.

Independent Producers' Chief Attacks Four-Point Program For Oil Industry

N. P. N. News Bureau

TULSA, Nov. 7. — The comment on the recent reduction in crude oil prices, contained in the four-point program proposed for the oil industry by the Standard Oil Co. of New Jersey in a recent issue of its house organ, has been termed an excuse and not a reason by Charles F. Roeser of Fort Worth, president of the Independent Petroleum Assn. of America. (See N.P.N. Nov. 2, page 5).

"Coming 19 days following the cut in the price of crude petroleum, the statement of the Standard Oil Co. of New Jersey must be regarded as only an excuse and not a reason," said Roeser in a formal statement.

"The statement supports its reasoning as being on 'moderate but persistent excess of supply over demand,' and 'overall stocks of crude oil and products are heavy and have been increasing more than a year.' The criticism of this statement is based on the following:

"1. Coming long after the cut it indicates a desire to find justification for what apparently was a mistake in judgment of those initiating the cut.

"2. The statistical statement given is misleading in that apparently it takes in the territory west of the Rockies that does not affect our price. As between Oct. 1, 1937, and Oct. 1, 1938, a total inventory of all stocks, crude and refined, has been reduced approximately 20 million barrels for the territory east of California, this being the only territory affected by the price change, and the California statistical position not being material to this issue.

"Another fundamental weakness in this statement is that it comes from and apparently speaks for the larger refining group which are also the principal purchasers, therefore, the group determining the price to be paid. This group has persisted for more than a year in excess refinery operations, increasing their stocks of refined products, however, all stocks have not been persistent in their excesses. The over-all picture includes fuel oil of which there is an excess. This fuel oil excess has been greatly aggravated by the enormous amounts of fuel oil imports that have been brought in by the Standard of New Jersey and other importers for whom they seem to speak. It would seem that those initiating the price cut seek to be the beneficiaries of their own wrong doing."

Japanese Buy Less U. S. Oil In September

LOS ANGELES, Nov. 7.—Crude oil shipments from California to Japan during the first eight months of 1938 represented 10 per cent of total production in the state, according to a report just issued by the Bureau of Mines. This volume was 81 per cent of offshore crude shipments from California during that period.

This percentage is appreciably higher than last year, when Japanese crude takings were 6.7 per cent of total production and somewhat less than 77 per cent of offshore movement of the raw product.

Total movement of crude to this buyer for the eight months period was 17,009,000 barrels, with indications the figure will top 20 million barrels before the end of the year. In 1932, this country took only 4,877,000 barrels of crude, or about 50 per cent of total offshore shipments. Since then there has been a sharp increase in successive years to the 1938 peak.

Large scale construction of refineries in Japan in recent years has shifted the demand from products to crude. Kerosine movement to this buyer practically has ceased and there has been some reduction in takings of the fuel oils. Demand for aviation gasoline has boosted the movement of that commodity over the past year.

A sharp cut in crude takings by this country from California in September—1,363,000 barrels, compared to 2,162,000 in August—and the dearth of active inquiry in recent weeks, has raised the question whether this buyer will seek elsewhere for at least part of its supplies. Such a development would act adversely on an already overtaxed storage position in California, particularly as it affected the heavier fuel oils.

In addition to its demand for crude, Japan took more than half of the California offshore shipments of gas and diesel oil during the eight months, and about 21 per cent of the offshore fuel oil movement. Japan also accounted for about 7 per cent of gasoline shipped offshore from this state.

Shipments of gas and diesel oil to Japan in the eight months period totaled 3,583,000 barrels, compared to 6,308,000 barrels for the full year of 1937. Fuel oil movement was 1,774,000 barrels in the eight months, as against 4,045,000 barrels during all last year. Gasoline totaled 981,000 barrels compared to 1,404,000 barrels in 1937.

More Oxidation Of Crankcase Oils Attributed To Their Longer Life

By ARCH L. FOSTER
NPN Technical Editor

CLEVELAND, Nov. 8.—That increase in oxidation of lubricating oils in the modern automotive engine does not necessarily mean that most lubricating oils are unsatisfactory for use in the 1939 automobiles may be concluded from the information gained in surveying the results of and prospects for lubricating the new cars.

The major cause of greater oxidation difficulties with the lubricating oils may be traced to smaller clearance spaces in the modern engine, rather than to more severe operating conditions, automotive engineers say.

With the improved surfaces in the modern engine which now are the rule, the engine when operated remains more nearly in new engine condition, automotive engineers state. Whereas the engine of several years ago showed greater microscopic unevenness in its piston, cylinder, bearing and journal surfaces, the new engines more nearly approach the "mirror finish" type of surface. Consequently the lubricating oil does not pass into the combustion cylinder to be destroyed and therefore to be replaced by "make-up" oil between change periods, and the consumption of oil has been greatly reduced in recent years, it is said.

The customary experience in probably a majority of cars is that no make-up oil is added to the crankcase between the oil change periods, even at 3000 miles. Oil thus retained is exposed to oxidizing conditions for a greater period. Oxidation of lubricating hydrocarbons has been shown to be a progressive reaction, oil showing little if any observable change in properties over a given period of time, until the point is reached when deposition of sludge, or "varnish," or the development of acidity appears, with the resultant troubles following in the wake of these oxidation products.

"Varnish" Deposition

Two major difficulties which arise in present-day engines are corrosion from acidity and sludge, or more commonly "varnish" deposition on pistons, rings and ring grooves and elsewhere in the engine. This varnish deposit appears as a tan-to-black coating, very hard and tenacious, clinging to the surfaces to such extent that, after heating up the engine and thus softening the deposit, pistons stick so that the starter will not spin the engine.

Several instances of this trouble have appeared in the last few years, severe enough that the customer blamed the battery, starter, or the engine in general for the difficulty. Tests of starters, battery and ignition have shown that in each case these have been in satisfactory condition. Removal of the varnish deposit has in every case eliminated the trouble, it is stated. Continued running of the engines on the same oils under the same conditions has resulted in a return of the trouble after a considerable time, in some cases, which have been observed.

Clearances the Same

Automotive engineers point out that effective clearances have not been appreciably reduced in the last few years, but that elimination of surface irregularities to a much greater degree means actually less wear in running, with the result that the engine remains more nearly in the condition, as to surfaces and clearances, as when it was new.

The gradual reduction of clearances leaves less space in which to "store away" undesirable deposits from either oxidation or thermal decomposition. Less oil gets into the combustion chamber, less carbon and sludge are produced, eliminating "carbon knock" trouble which years ago was a major problem. But, therefore, the oil is more severely oxidized in the crank-case by remaining there, without the dilution of added make-up oil, over a longer period of time.

We are reminded of the experience of a famous piston ring manufacturer who, several years ago, had made remarkable improvements in piston rings, and who started on the Indianapolis Speedway track to show that a single crankcase filling would permit operation of a car at high speeds for 3000 miles or more without any make-up oil whatever. Long before the allotted distance had been traversed, poor engine performance necessitated opening the sealed crankcase; the rate of oil consumption was found to be low enough to permit completion of the run, but the oil had so oxidized and its properties so changed that it was necessary to change the whole batch to complete the run.

More Occurrences Found

This is the condition, automotive engineers point out, which is now becoming common, what with increase in engine speeds, lower oil consumption and other factors. Several engine manufacturers state that the problem has not reached a point of severity, so far that it is troublesome as yet. Service organizations are finding a number of complaints, but not frequent enough to become a major problem.

Cooling jackets have been extended lower on cylinder walls; water temperatures, they say, are not appreciably higher than formerly, due to greater cooling capacity. Oil temperatures in a series of determination in cars of, for example, 1933 to 1938 vintage, show that crankcase temperatures have not changed to any great degree. The oil simply stays in the crankcase longer to permit oxidation to complete its work.

Naphthenic oils oxidize faster and produce quicker ring plugging than do paraffinic base oils, one laboratory claims.

Several Theories Advanced

Several theories have been advanced to explain what happens to the oil in the crankcase. One investigator has found that some oils produce, upon Underwood test oxidation, a high increase in viscosity and high naphtha insolubles. Another type also shows high viscosity increase and low insolubles. This laboratory thinks it possible that, in the oil showing low naphtha insolubles, the oxidation product formed is oil-soluble, raising the viscosity, and that this oil-soluble product is that which on continued oxidation produces the "varnish" which is appearing in newer engines.

In view of the entire picture, some engineers believe that more data should be obtained on actual ring and piston temperatures, rather than to look for the trouble to be explained away by crankcase or cooling water temperatures.

No correlation between either solvent-refined or conventionally refined oils, and varnish deposition tendencies has been found. Oils of both types have shown varnish deposits, it is said, while other oils of each type have deposited no objectionable amounts of varnish. In one instance the writer has been shown pistons and accessories from an engine operated on a conventionally refined oil. Heavy varnish deposit was obtained, but without any corrosion of bearings or wrist-pin bronze bushings.

In a similar engine operated on a solvent-extracted oil, no trace of varnish was formed; the bronze pin bushing, however, was severely corroded, approaching the point of excessive wear and probably fatigue and seizure had the operation continued long enough.

One Conclusion Drawn

A theory to explain this result is that, in solvent extraction of one oil, the constituents which form the resinous "varnish" were removed; at the same time natural inhibitors of acid formation were also removed and were not replaced, permitting the oil to form corrosive oxidation products but no varnish. Both the inhibitor and the varnish forming constituents remained in the other oil, resulting in no corrosion but heavy varnish. The conclusion from this theory is that oxidation inhibitors to guard against acid formation be added to, or returned to the lubricant, after careful refining to remove sludge and varnish-forming products.

Automotive engineers have not yet completely surveyed the list of available crankcase oils for their individual varnish-forming properties. Nor are they making any recommendations regarding avoiding the use of any brand of oil, to their service organizations, these engineers state. No "approved lists" of oils are to be considered so far as present plans go. Many companies have not found conditions severe enough to warrant such action, though it is reasonably expected that these conditions may continue, possibly be aggravated in the future.

Various individual brands of oils have been studied by different laboratories, and have been found to give satisfactory service without corrosion or varnish deposition. It is pointed out that to relax in engineering standards to permit higher oil consumption might very likely eliminate the varnish problem but would without doubt introduce, or re-introduce, other problems of even greater seriousness, such as greater carbon deposition in combustion chambers already seriously de-

(Continued on page 31)

1938 Gasoline Consumption Leads '37 By Eyelash

State Gasoline Tax Collections Show Slight Increase in Eight-Month Total

N. P. N. News Bureau

NEW YORK, Nov. 7. — U. S. gasoline consumption achieved an increase of 0.33 per cent the first eight months of this year as compared with the same period in 1937, the American Petroleum Institute reports.

This gain, while relatively slight, carries added significance when it is recalled that the first eight months of 1937 contained none of the "depression months" that came later that year, while the same period in 1938 experienced the full effect of that depression.

Thirty-one states experienced an increase in gasoline consumption during the first eight months this year as compared with the same period in 1937. In most instances the grain belt states set the pace. South Dakota, for example, had a gain of 15.79 per cent, while North Dakota's gain was 9.48 per cent.

Virtually all the southeastern and southern states have experienced increased gasoline consumption the first two-thirds of this year. On the other hand, the New England states and some of the larger industrial states have experienced decreases in consumption. Michigan, for example, suffered a drop of 6.91 per cent, while Pennsylvania and New York had losses of 1.57 and 1.56 per cent, respectively.

Gasoline consumption in August, meanwhile, was 1.87 per cent higher than for the same month in 1937, with 33 states and the District of Columbia showing gains. Five of the states which had losses in August, however, still are ahead of last year on the eight months cumulative totals.

It will be recalled that for July the institute had reported a drop of 4.7 per cent from July, 1937, which pulled the cumulative total for the first seven months of this year to a figure only 0.06 per cent above that of the same period last year.

Georgia Tax Receipts Up

By Telegraph

ATLANTA, Ga., Nov. 7.—Georgia's 6-cents-per-gallon gasoline tax netted $1,684,624 during October, state department of revenue reports, a gain over collections during the same month last year which totaled $1,656,611. Collections for the first 10 months of this year amounted to $16,253,189 and for same period last year $16,014,656.

GASOLINE CONSUMPTION BY STATES, AUGUST, AND FIRST EIGHT MONTHS, 1938

(Figures in Thousands of U. S. Gallons)

	Month of			% Change	8 Mos. Ending With		% Chng.
	July, 1938 Gallons	Aug., 1938 Gallons	Aug., 1937 Gallons	1938 over 1937	Aug., 1938 Gallons	Aug., 1937 Gallons	1938 over 1937
Alabama	19,782	20,857	20,524	+ 1.62	150,109	148,767	+ 0.90
Arizona	8,484	8,610	8,766	— 1.78	67,855	68,034	— 0.26
Arkansas	14,300	15,306	15,630	— 2.07	106,179	106,917	— 0.69
California	154,546	161,339	157,575	+ 2.39	1,164,055	1,168,231	— 0.36
Colorado	23,815	24,545	23,991	+ 2.31	152,678	148,662	+ 2.70
Connecticut	30,442	32,575	31,992	+ 1.82	209,291	216,062	— 3.13
Delaware	5,640	5,861	5,497	+ 6.62	37,340	36,844	+ 1.35
District of Columbia	12,151	12,558	11,971	+ 4.90	92,045	90,646	+ 1.54
Florida	24,789	25,357	24,558	+ 3.25	228,371	220,677	+ 3.49
Georgia	28,821	30,692	29,963	+ 2.43	221,622	218,620	+ 1.37
Idaho	9,723	10,831	11,219	— 3.46	61,686	60,516	+ 1.93
Illinois	123,396	126,397	123,616	+ 2.25	873,204	855,828	+ 2.03
Indiana	55,552	59,763	58,857	+ 1.54	415,841	421,043	— 1.24
Iowa	50,469	48,982	46,493	+ 5.35	350,676	328,881	+ 6.63
Kansas	53,472	48,173	51,242	— 5.99	324,199	321,966	+ 0.69
Kentucky	23,065	23,874	24,323	— 1.85	165,996	166,402	— 0.24
Louisiana	19,986	20,675	21,177	— 2.37	159,607	154,356	+ 3.40
Maine	16,295	18,752	18,548	+ 1.10	95,855	96,293	— 0.45
Maryland	25,348	26,656	25,715	+ 3.66	179,922	177,336	+ 1.46
Massachusetts	65,627	71,254	68,699	+ 3.72	449,078	461,422	— 2.68
Michigan	95,816	106,031	108,923	— 2.65	687,624	738,700	— 6.91
Minnesota	52,958	57,726	54,115	+ 6.67	349,734	328,953	+ 6.43
Mississippi	16,210	16,904	17,999	— 6.08	124,782	124,926	— 0.11
Missouri	54,481	56,147	57,083	— 1.64	393,182	387,693	+ 1.41
Montana	12,814	14,751	12,616	+16.92	80,813	77,583	+ 4.16
Nebraska	23,414	22,428	22,244	+ 0.83	152,630	150,936	+ 1.12
Nevada	4,013	4,277	4,192	+ 2.03	25,089	24,203	+ 3.66
New Hampshire	9,229	10,982	10,547	+ 4.12	56,519	57,440	— 1.60
New Jersey	77,388	82,574	78,728	+ 4.89	551,271	545,376	+ 1.08
New Mexico	8,407	8,859	8,686	+ 1.99	59,534	58,440	+ 1.87
New York	177,072	185,531	181,709	+ 2.10	1,187,914	1,206,766	— 1.56
North Carolina	36,990	36,796	34,770	+ 5.83	260,236	252,466	+ 3.08
North Dakota	13,580	17,302	15,473	+11.82	88,693	81,015	+ 9.48
Ohio	113,898	117,966	122,029	— 3.33	837,842	869,467	— 3.64
Oklahoma	33,880	37,629	36,589	+ 2.84	260,829	258,169	+ 1.03
Oregon	23,223	24,267	24,893	— 2.51	152,797	150,229	+ 1.71
Pennsylvania	130,409	137,781	134,333	+ 2.57	917,028	931,624	— 1.57
Rhode Island	11,785	12,788	12,423	+ 2.94	79,507	82,202	— 3.28
South Carolina	16,503	18,285	16,628	+ 9.97	128,348	123,973	+ 3.53
South Dakota	14,202	13,293	11,542	+15.17	87,305	75,401	+15.79
Tennessee	18,966	26,980	26,099	+ 3.38	184,418	177,694	+ 3.78
Texas	112,637	114,170	109,165	+ 4.58	843,034	803,080	+ 4.98
Utah	9,116	9,782	9,270	+ 5.52	61,024	59,618	+ 2.36
Vermont	6,985	7,747	7,842	— 1.21	42,091	42,464	— 0.88
Virginia	31,950	35,297	32,532	+10.43	232,060	224,666	+ 3.29
Washington	33,883	35,002	35,750	— 2.09	224,627	221,342	+ 1.48
West Virginia	16,419	18,523	19,102	— 3.03	124,186	129,985	— 4.46
Wisconsin	53,103	57,294	54,925	+ 4.31	356,891	355,941	+ 0.27
Wyoming	7,154	7,119	8,439	—15.64	40,805	42,905	— 4.89
Total	1,982,215	2,087,288	2,049,002	+ 1.87	14,096,422	14,050,760	+ 0.33
Daily Average	63,942	67,332	66,097	+ 1.87	58,010	57,822	+ 0.33
Change from previous year:							
Total change	.....	+38,286	.....	.....	+45,662	.....	.....
Percentage change in Daily Average	.....	+1.87%	.....	.....	+0.33%	.....	.....

Burner Shipments Gain Nearly 100% During September

N. P. N. News Bureau

WASHINGTON, Nov. 7.—Distillate oil burner shipments by American manufacturers totaled 80,954 units in September, Census Bureau reports, compared with 41,018 burners shipped in August and 96,909 in September 1937.

Total shipments during the first nine months of this year amounted to 214,749 burners while in 1937, during the same period, 296,125 units were shipped. Burners included in these shipment figures are those used in ranges, stoves, water heaters, and space heaters.

During September, shipments of burners using fuel oil of CS No. 1 grade or heavier amounted to 26,405 units, as compared with 15,373 burners in August, and 33,711 units in September, 1937. January-September shipments this year totaled 97,180 units, as compared with 149,870 burners in the first nine months of 1937.

Auto Manufacturers Turn Out 2,704,992 '38 Model Vehicles

N. P. N. News Bureau

NEW YORK, Nov. 7.—During the model year ending Sept. 30, 1938, the automobile industry produced a total of 2,704,992 motor vehicles, according to the Automobile Manufacturers Assn., which announces this figure as representing factory sales by U. S. and Canadian plants.

Of this total, 2,130,214 represent passenger cars, and 574,778 motor trucks, commercial vehicles being 21 per cent of the total as against 18 per cent last year.

According to the A.M.A., the total is well above the depression years, exceeding the low of 1932 by almost 1,250,000 units, although it represents a decline of 47 per cent from the corresponding 12 months last year.

World registration of motor vehicles is now computed at 41,500,000 cars and trucks, of which 70 per cent are in the United States, according to the A.M.A.

Crude Oil Production for the U. S.

(American Petroleum Institute figures)

	Week Ended Nov. 5 Barrels	Oct. 29 Barrels	Oct. 22 Barrels
Oklahoma City	88,100	85,450	104,950
Total Oklahoma	437,000	432,000	450,750
Kansas	144,600	157,100	153,750
East Texas	518,450	370,050	369,850
Total Texas	1,655,100	1,260,650	1,247,100
Total Louisiana	268,400	269,650	266,600
Illinois (new pools)	87,200	77,150	78,900
California	656,100	659,000	668,900
East of Rockies	2,972,450	2,578,550	2,578,500
Total U. S.	3,628,550	3,237,550	3,247,400
Crude Imports	91,280	68,000	83,140
Total New Supply	3,719,830	3,305,550	3,330,540

More Oxidation Of Crankcase Oils

(Continued from page 29)

creased in carbon-storing capacity by the very desirable increase in compression ratios.

The problem for the oil refiner becomes one of developing suitable refining methods which will produce nonvarnish-forming oils, in those cases where the existing product now may be expected to deposit objectionable quantities of varnish if the present trends in engine design continue, as is to be expected. Reduction of oil consumption is a strong point in sales talk to customers, and still more important with users of commercial vehicles, automotive men point out.

Also, reduction of oil consumption aids materially in eliminating some former troubles. It has been shown practicable to produce oils satisfactory as regards varnish deposition and avoidance of corrosion; in fact there is no reason to suppose that the majority of oils on the market are proving, or will prove unsatisfactory in the future, in modern engines. The present situation is an individual matter with the individual oil manufacturer, automotive engineers emphasize, and by no means a general indictment of oils on the market.

Gasoline Shipments Off; Stocks Cut in Mid-Continent Area

N. P. N. News Bureau

TULSA, Nov. 7. — Gasoline stocks were reduced 452,494 barrels in September by the Mid-Continent refiners reporting monthly operations to the Western Petroleum Refiners Assn. The reduction was made in spite of a drop in shipments of 1,026,475 barrels, and was due to the refiners having reduced production 617,410 barrels for the month.

Despite the draft on gasoline stocks, the inventory at the end of the month was 323,865 barrels higher than for the same period in 1937. Shipments last September were 1,238,662 barrels lower than September 1937 while production was 1,153,423 barrels under that of the same period last year.

Comparative figures on gasoline production, shipments and stocks are shown in the accompanying Table No. 1.

Production of kerosine was reduced 113,004 barrels in September, while shipments were 80,240 barrels lower, stocks on Sept. 30 showing a gain of only 2676 barrels.

The season for tractor fuel being near its close production was reduced 30,430 barrels as shipments dropped 64,187 barrels, which permitted refiners to reduce inventory 7371 barrels.

The approach of the furnace and gas oil season was reflected in the increase in production of those oils by 254,215 barrels with shipments showing a gain of 188,073 barrels and inventory increasing 130,291 barrels.

Fuel oil stocks were reduced 17,675 barrels with shipments off 35,365 barrels while production showed a drop of 305,868 barrels.

California Oil Men Debate Merit of Gas Repressuring

'Shortage' of Statistics

The American Petroleum Institute's weekly report of U. S. refinery operations was not available at press time due to the Election Day holiday in New York City.

Weekly statistics on Pennsylvania lube inventories, compiled by the National Petroleum Assn., had not been released Tuesday afternoon when this issue of N.P.N. went to press.

The weekly crude stocks report by the Bureau of Mines was also missing at press time.

All of these reports, together with later figures, will be published on this page next week.

Notice

Further revision of listings for export gasolines as published Nov. 7 in *Platt's Oilgram*, Gulf Coast Market, also appears in this issue of N.P.N. Since the first revision (N.P.N., Oct. 26, 1938) conflicting suggestions have been received as to further revisions. In an effort to reflect export trade practices as closely as possible, the present listings (beginning on Page 140) will be published for three months, following which an attempt will be made to simplify these brackets on the basis of information obtained during this period.

N. P. N. News Bureau

LOS ANGELES, Nov. 5. — Can the practices of injecting surplus natural gas into underground reservoirs for the purpose of storage, repressuring, or pressure maintenance be justified from the standpoint of conservation, greater ultimate recovery of oil, or economy?

This was the subject of a highly controversial discussion featuring the annual fall meeting of the California Natural Gasoline Assn. in Los Angeles, Nov. 4.

Dr. Stanley C. Herold, consulting geologist and engineer, was lead-off man at the afternoon session with a paper in which he continued a 15-year battle for recognition by petroleum engineers of the factors affecting movement of oil and gas in the formation.

Stating that he was not condemning the practices of gas injection, Stanley seriously questioned whether they were profitable, but in any event urged engineers to study the mechanics of oil, gas and water under pressure so they would know what they were doing and why. It was his opinion that much of this gas injection work was being done without full knowledge of the factors involved.

He discussed differences in subsurface conditions found in various sections of the country and pointed to them as reasons why practices meeting with success in some areas could not be adopted universally. He gave as an example, the lack of edge water encroachment in fields east of the Rocky mountains, as against the movement of water in California sands, closely following withdrawals of oil and gas and creating resistance to injection of gas.

A. C. Rubel, director of production, Union Oil Co., in a paper answering the challenge offered by the previous speaker and outlining the "Possibilities and Limitations of the Produc-

TABLE NO. 2—Production, Shipment and Stocks of Principal Refined Products (Except Gasoline) for September and August as Reported to Western Petroleum Refiners Assn. by Member Companies

(Figures in Barrels)

Product	September	August	Change
Kerosine:			
Production	488,882	601,886	—113,004
Shipments	483,062	563,302	— 30,240
Stocks (9-30)	682,111	679,435	2,676
Furnace & Gas Oil:			
Production	627,926	373,711	254,215
Shipments	489,769	301,696	188,073
Stocks (9-30)	1,377,491	1,247,200	130,291
Tractor Fuel:			
Production	162,489	192,919	— 30,430
Shipments	169,860	234,047	— 64,187
Stocks (9-30)	150,867	158,238	— 7,371
Fuel Oil:			
Production	1,523,595	1,829,463	—305,868
Shipments	1,524,594	1,559,959	— 35,365
Stocks (9-30)	3,097,538	3,215,213	— 17,675

TABLE NO. 1—Comparison of Gasoline Production, Shipments and Stocks for September and August, 1938, and for September, 1938 and 1937, as Reported to Western Petroleum Refiners Assn. by Member Companies

(Figures in Barrels)

	1938			September		
	September	August	Change	1938	1937	Change
Gasoline:						
Production	7,237,178	7,854,588	— 617,410	7,237,178	8,390,601	—1,153,423
Shipments	7,554,716	8,581,181	—1,026,475	7,554,716	8,793,378	—1,238,662
Stocks 9-30	6,397,311	6,849,805	— 452,494	6,397,311	6,073,446	323,865

tion of Oil Under Pressure Maintenance from California Fields", attacked the charge that gas injection practices were not profitable.

Taking each type of injection in order, he said statistics proved the value of putting natural gas back in the ground for future use. From January 1920 to August 1938, he said the estimated natural gas production from California fields was 558 billion cubic feet, of which 128.5 billion cubic feet, or 22 per cent of the total had been blown to the air.

On the basis of a value in the field of 10 cents per 1000 c.f., he said this represented a loss of $128,500,000 and thought that methods of production which would permit a loss of this size were worthy of consideration. From the B.t.u. value of the gas alone, he believed steps to correct this waste would be worthwhile.

The speaker said there was a large volume of natural gas production that cannot be used either as a propulsive force or as fuel, and he urged that serious consideration be given to means of checking its waste. He said storage had been tried in an effort to solve this problem, and that 90 billion cubic feet had been used in California in these practices with some degree of success.

With respect to repressuring —defined as injecting gas into semi-depleted fields for the purpose of increasing oil production, he said this practice was particularly adaptable to California and especially to fields in the Los Angeles basin.

Lag In Pressure Drop

He said there was a lag between pressure drop on oil and gas in the sands and restoration of this pressure by edge water encroachment; that the water did not follow immediately behind the oil and gas as withdrawn, and that repressuring takes up this lag.

However, Rubel said he believed the practice was precluded in the Los Angeles basin fields because of diversity of ownership and interests. Without complete control of a reservoir, or a unified scheme of operation, he said, it was impossible to undertake any extensive program.

As an example of repressuring he cited the Lompoc field, wholly controlled by Union and shut in since 1928. Here he said 300 to 600 thousand cubic feet of gas had been injected daily and it had been noted that there was a substantial increase of pressure on wells formerly pumpers and that some of these actually would flow.

The speaker said of pressure maintenance — injection of gas into fields still in stage of flush production — that the practice was comparatively new in California, although some operators were using it successfully in fields under one control.

With reference to Herold's contention that pressure maintenance resulted in an increasingly large gas cap on the structural high which would affect oil production of wells down-structure as the gas pressure increased, Rubel said this would result naturally as oil was withdrawn from the structure and cited Kettleman Hills as an example. Here again he said the practice could not be put into effect in California under present methods of operation.

Henry N. Wade, of Parkhill-Wade, consulting and construction engineers, followed Rubel with a discussion on "Effect of Pressure Maintenance on Gasoline Plant Design".

Brings 'Dead' To Life

He said that gas injection had the prospect of bringing dead wells back to life and that conservation of gas prolonged the life of natural gasoline plants. He discussed costs of compression installations for various operating pressures.

Plant construction with capacity larger than immediately needed was urged to take care of a tendency for gas production to increase in the later life of the field. The possibility was seen that natural gasoline plants would have to process a much lower gasoline content gas under pressure maintenance, but that the plant life would be longer.

He said operating pressures as high as 1200 pounds per square inch were feasible and believed the result would be increased operating efficiency, stabilized gas production and increased output.

Possible utilization of lighter hydrocarbons such as ethane, propane and butane for the production of chemicals, was the subject of a paper by Dr. Robert E. Vivian, associated professor of chemical engineering, University of Southern California.

He said improvements in cracking and refractionating processes had opened a wide field in the utilization of petroleum by-products by the organic chemist in making valuable products. He thought this development was in its infancy and that, with an increase in market demand, research would make many additional chemicals available from petroleum hydrocarbons.

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OIL TRANSPORTATION

Competition Builds Oil's Transportation System As Government Blights Rails

THIS annual survey of the oil industry's OWN transportation system, powered by fuels that are its own products, comes at an opportune and politically hectic time.

For this review by NATIONAL PETROLEUM NEWS will bring every man in the oil industry up-to-date on the facts regarding the industry's vast system of trucks, truck transports, barges, tankers and pipelines, at a time when the whole system is under the most severe attack in its history.

The transportation system—the railroads—that the oil industry's assortment of private carriers has substantially displaced because of the industry's far superior efficiency and lower cost, is fighting back in desperate fashion. The railroads are supported by the coal interests and their labor factotum CIO Lewis, as well as by the railroad labor unions and all others living by reason of railroad activity.

Probably somewhat more than sympathetic support can also be expected for the railroads from their stockholders and particularly those represented by insurance companies and investment trusts.

Still additional support for the railroads can be expected from the federal and state railroad commissions and all others who have lived off of the business of regulating the railroads.

The battle is sharply drawn between the railroads and all those thus dependent on them, and the vast independent transportation system which has grown up within the oil industry and outside of the oil industry, and grown up solely because of its lower costs and greater efficiency in service to the public.

The battle is between an archiac government controlled and government regulated—in fact almost government operated—system on the one hand, and a truly privately owned and privately operated system on the other—a system that is only now receiving what appears to be the heavy hand of government control.

The contrast between these two transportation systems is striking and is the very root of the big political question before the American people today, a question on which the whole future policy of this country depends.

On the side of government, there is universal acclaim of the Interstate Commerce Commission, which sets the pace for all the state railroad commissions, as to its being, in intelligence and efficiency and wisdom and honesty, the most outstanding government regulatory and administrative agency in the history of this country, if not in world history.

For nearly forty years the "I.C.C." has had plenty of power to control freight and passenger rates, as well as operating conditions and even capital structures. Increasing powers of survey and regulation have been given it from time to time. In fact the writer does not now recall a single additional power over the railroads which the commission has asked for but what it has gotten. Also the "I.C.C." has been given the most generous financial support by Congress with which it has employed one of the largest armies of government employes.

Under the ministrations of this government agency, which has almost literally told the railroad owners and executives when to come and when and where to go, the railroads today are largely in bankruptcy, are continuing to lose business; and, short of some major operation on railroad capital structures, physical characteristics and operating policies, are headed straight for a grand smashup or government ownership.

On the side of the oil industry's transportation facilities, with which should be linked in this picture the independent privately owned allied transportation facilities of the country, other than the railroads, there has been no

government regulation or control for other than safety reasons, up to the present time.

On the side of these privately operated carriers there has been no limitation as to whether they should be large or small, have four cylinders or twelve, big tires or little, save as was necessary to protect roads. There has been no limitation as to when and where they should operate or with what size "crew"; barges can crawl up the shallowest "creeks" and tankers poke into the smallest of harbors, all depending on the ingenuity of their owners and skippers. Pipelines born in the oil industry have been perfected within that industry and with the products that the industry refines. So efficient have these become that gasoline lines are reaching out to centers of the greater consuming districts, reducing even the low cost of truck and barge transport.

But the outstanding factor in the development of the oil industry's transportation system and that of all other industry, is the utter freedom of the individual and the individual manufacturer to think up and try out at will all sorts of ideas for improvement and lower cost, without having to go to any government authority for permission or approval. And, at least until the coming of the excess profits and undistributed profits taxes, those individuals who thus brought new and worthwhile ideas as to cutting costs in moving this country's goods, enjoyed the opportunity of reaping the reward, in dollars for their greater ingenuity, which, thanks to our American system, untold tens of thousands of them did.

So there is presented to members of the oil industry in this issue of NATIONAL PETROLEUM NEWS today's facts about the oil industry's transportation system, what it is, how it has grown, what it means to the oil industry and to the country, and what may be its future, if government does not hamper its growth.

The internal combustion engine, coupled with the fact that nature provided petroleum and coupled with the added fact that competent men developed oil, just as they have developed all other American industries, has literally revolutionized this country and its manner of living. The internal combustion engine, starting barely a quarter of a century ago, is flattening out cities, spreading our population out into sunshine and on selfsubsistence country acres, and for a couple of cents per mile, is broadening the physical and spiritual lives of all Americans, rich and poor. And to the doors of all, through the new transportation system that has been built around the internal combustion engine, it is bringing the "freight" of the country, the food and clothing and housing supplies and in addition the comfortable and pleasurable things of life.

All this the internal combustion engine has done to and for this oil industry and to and for the American people. It has changed almost everything, **Except the Railroads** that are under government control. The railroads until recently not only refused to adopt the internal combustion engine, in their operations, but they refused to adopt and even to see the idea that it represented and which brought about its tremendous growth, **Individual Freedom** for each family and for each person, the freedom to come and to go to the next county or to the far ends of the earth, as the **Individual American**—yes, and his alien visiting brother too—might wish.

Now government, driven on by various groups with varying selfish interests, seeks to control one of the products of the internal combustion engine, its adaptation to the movement of food and clothing, housing and all living comforts and, in addition, its own fuel.

As the plans are unfolded for hedging around with government rules the freedom of the internal combustion engine, one is entitled to wonder how soon and to what extent will this government regulating of the physical activities of the internal combustion engine, also undertake to regulate and restrict the **Idea** of that wonderful power device, the IDEA of the **individual's freedom** to come and to go as he pleases and at little cost?

So, on the eve of a new epoch, at least an epoch of battle in Congress and state legislatures this winter, over the control of what the internal combustion engine and its gasoline, kerosine and diesel engine fuel stands for, NATIONAL PETROLEUM NEWS presents a few facts that, it trusts, will better inform you, the working oil men, each of whom will be called upon even in the next few weeks, to decide his own course of conduct toward these changes before us.

Warren C. Platt

EDITOR

Petroleum tankships are pioneering new waterways, following almost in the wake of the dredge boats. In the Pacific Northwest, completion of the Bonneville Dam and Locks has opened up the Columbia river to Umatilla, Oregon, 200 miles upstream from Portland. Pictured here is the "Inland Queen," operated by the Inland Navigation Co., which has a capacity of 300,000 gallons and can push four or five barges. On the down-trip, this dual purpose boat can haul 800 tons of farm produce. Oil truckers have proposed a joint barge-truck rate, hauling out of an Umatilla terminal supplied by the "Inland Queen." The proposed joint rate would be 20 per cent less than the all-rail or all-truck rate from Portland

Oil's Own Carriers

Transport 2 Out Of 3 Gallons Of Refined Products to Markets

By A. M. Petty
N. P. N. Staff Writer

THE oil industry during 1938 has continued to move an increasing volume of petroleum products through its own transportation facilities—trucks, barges, tankers and pipelines.

As prices to the consumer continued to decline, and margins narrowed for both refiner and marketer, even before the open drop in the prices of crude oil, it is only fair to credit to the industry's own efficient transportation system some of this saving in prices of petroleum products to the consumer.

An era of lower marketing margins is approaching, as has been pointed out recently by leaders among jobber and retailer groups, and it is coming in on the heels of an increased barge and truck movement.

More truly than ever before, it can be said today that marketing begins at the refinery gate; that the opportunity for further economies in operations lies chiefly in the lowering of costs before the products are dumped at the retail outlet.

The potentialities of low-cost barging and trucking are enormous—as a glance at any map of the U. S. will demonstrate. Most large cities have water transportation at their door. Nearly all the dry-land cities are linked to waterways by improved highways.

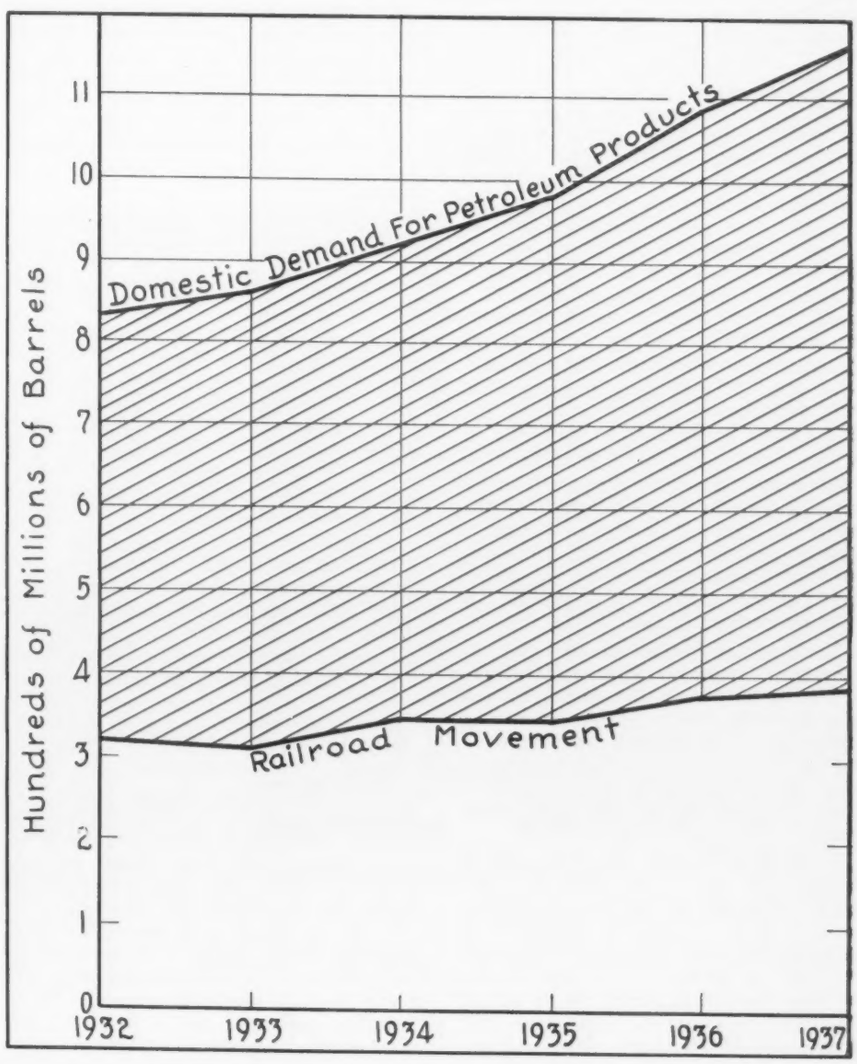
Of the total U. S. population, 70 per cent live within 50 miles of a navigable waterway, it has been estimated.

That means that about three out of every four customers of the oil industry can be reached by a short truck haul from a water terminal. And, since 50 miles is only a modest haul for a transport truck, the population percentage which can be served by trucks hauling out of existing and potential water terminals, is perhaps considerably larger than 70 out of every hundred people.

Total movement of petroleum products by water in 1937 was 712,379,000 barrels, as compared with 596,241,000 barrels in 1936 — a gain of 19 per cent.

There are no total figures for truck movement but indications are that the volume increased in 1937, with still further gains this year.

Refined products originated by pipelines amounted to 62,978,252 barrels in



Consumption of petroleum products in the U. S. increased 40 per cent from 1932 to 1937 but the oil movement by rail (indicated by the white area on the chart) gained only 16 per cent in the five-year period. Included in the rail total is the short-haul movement from pipeline and marine terminals. So, the movement by the trucks, barges, pipelines and tankers, as indicated by the shaded area, does not give a complete picture of the total volume hauled by non-rail carriers because it does not include the tonnage which was first hauled by pipelines, barges or tankers and then by rail on the short-haul from terminals to destination

This informal picture shows an oil barge unloading at an Ohio river terminal, showing that no elaborate dock is necessary for a marine terminal

1937 as compared with 51,547,384 barrels in the previous year, representing an increase of 22 per cent.

In contrast, the rail tonnage of petroleum products originated on Class I steam railways in the U. S. (which account for 98 per cent of the rail traffic) increased only 30 per cent, from 370,161,000 barrels in 1936 to 381,520,000 barrels in 1937. Even more striking, figures for the first six months of 1938 show a decrease of 14 per cent as compared with the same period of 1937.

WHILE consumption of petroleum products in the U. S. gained about 40 per cent from 1933 to 1937, the railroad movement increased only 16 per cent in that period. In other words, in 1932 the rails originated an oil tonnage equivalent to 39 per cent of the total domestic demand, as against 33 per cent of the total in 1937. This indicates that non-rail carriers hauled the equivalent of 67 per cent of the petroleum products consumed in 1937. The rails' 33 per cent also takes in rail movements from pipeline, barge and tanker terminals.

Two general increases in rail freight rates on petroleum products within the last 12 months have accelerated the trend to non-rail carriers. Complete figures are unavailable, but some waterways, like the Ohio river, are showing a large gain in oil tonnage for 1938 as compared with 1937.

Tankers and barges are winning the long-haul tonnage where waterways are available, while the flexibility and low operating costs of the transport truck are gaining more and more of the short-haul tonnage. In some cases, also, transport trucks are being used for distances up to 400 miles and more.

In some areas, like the southeastern states, the rails have slashed their rates repeatedly in an attempt to recapture gallonage lost to trucks. Each time the rate cut was to a level which the rails hoped would drive the trucks off the road. But somehow or other, the truckers managed to survive and thrive, perhaps through additional operating economies as they gained experience.

Scarcely a gallon of petroleum products reaches the South Atlantic seaboard states by rail from the west. Tankers have long since taken over the long haul. But the rails still battle trucks and barges for short hauls from the tanker terminals.

Only one of the rail rate increases of the past year (the March 28, 1938, advance of 10 per cent) was made applicable in Southern Territory. Even so, the trucks probably have made additional gains, as witness current reports that southeastern railroads are planning to put in a new low rate scale in a few weeks, replacing the so-called Carolina scale on movements inland from southeastern seaport oil terminals.

A sidelight on the long-haul picture in the southeast is the shrinkage in the average rail haul of one major oil company. Today, this company's average rail haul for its operations in the southeast is something under 200 miles, as against 600 miles not so many years ago — and this company has clung to the rails more than most of its competitors in that territory.

But the growth of oil trucking has not been confined to the southeast — it has been nation-wide.

Indices on truck loadings by for-hire truckers of all commodities, including petroleum products, are compiled each month by the American Trucking Associations, Inc., and, while no actual tonnage figures are given, the A.T.A. officials regard this "sampling" as sufficiently representative to give a fair picture of the ups and downs of freight movement by motor carrier.

The A.T.A. truck loading index for petroleum products in 1937 was almost 24 per cent higher than for the previous year. Despite a slump earlier this year during the general business recession, indications are that the upward trend has been resumed. The oil-trucking index figure for September was given as 140.04, an increase of more than 40 per cent over the 1936 monthly average, which the A.T.A. uses as the base figure of 100 in computing its indices on truck loadings. The 1937 monthly average for the oil-trucking index, on this base, was 123.73.

Charles J. Yokom of Detroit, Overland Transportation Corp., vice-president of the A.T.A. and chairman of its petroleum transporters' division, estimated that in 1937 a total of 800,000,000 gallons of gasoline was hauled by truckers in Ohio, Michigan, Indiana and Illinois under contract to oil companies. And this figure, of course, does not include the volume hauled by trucks operated directly by oil companies, big and little, in these states. Yokom predicted an even larger gallonage would be trucked in 1938.

In Ohio, several major companies are reported to be trucking virtually all of their gallonage. From Cleveland, for example, all but one of the major companies (and its gallonage is not among the largest) are using trucks, except in a few cases where the customer specifies rail delivery. Short hauls off the gasoline pipelines in the Buckeye state are mostly by truck.

Nebraska has been the scene of widespread trucking operations for several years. In 1935, about 30 per cent of the petroleum products entering Nebraska were brought in by truck, with 54 per cent coming in by rail, and the balance by pipeline. For the first eight months of 1938, the truck percentage was 48 per cent as against 37 per cent for the rails.

BESIDES the large volume moving by truck into Nebraska, Colorado and other neighboring states, there is considerable truck movement within the Sunflower state. A witness testifying at a recent Interstate Commerce Commission hearing stated he was reliably informed that four Kansas refineries in 1937 originated, for Kansas consumption, 10,600 cars of gasoline. Of this total, 1565 cars went by rail and the 9000 by tank trucks, he said.

In the east, trucking of petroleum products is firmly established, with some operators having as many as 50, 75 and 100 trucks on the road. Besides major oil companies operating their own trucks, some of the smaller marketers have set up their own trucking subsidiaries.

On the west coast, oil trucking gained a foothold somewhat earlier than in other sections of the country.

Today, the railroads in California are hauling less than 20 per cent of the total petroleum movement in the state, it was testified by railroad representatives at a recent ICC hearing in Los Angeles. An increase in rail rates, ordered by the California Railroad Commission, prompted oil marketing companies to use more of their own motor equipment in line hauls, it was said. This is expected to be reflected in a gallonage loss by both the rails and for-hire trucks for 1938. It was also testified that the rails were actually handling now less than 8

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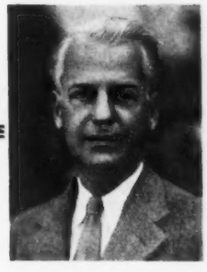

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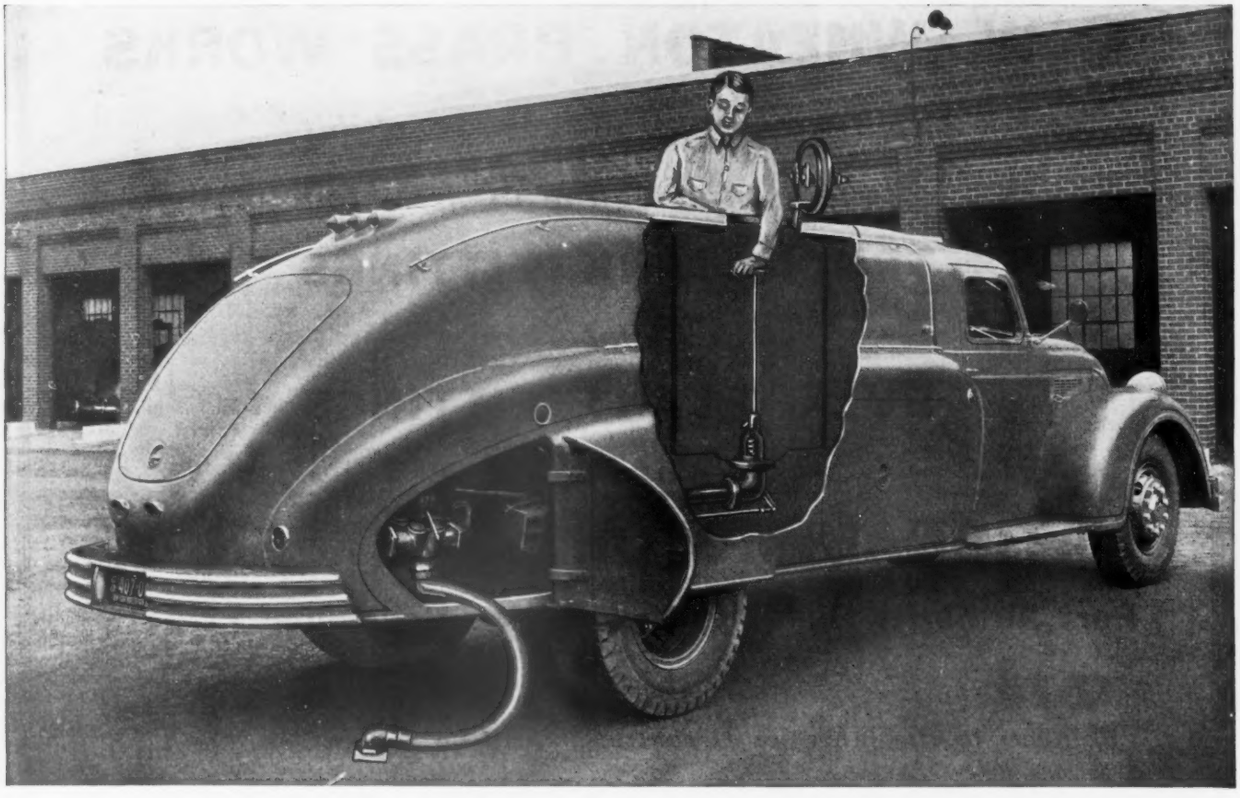
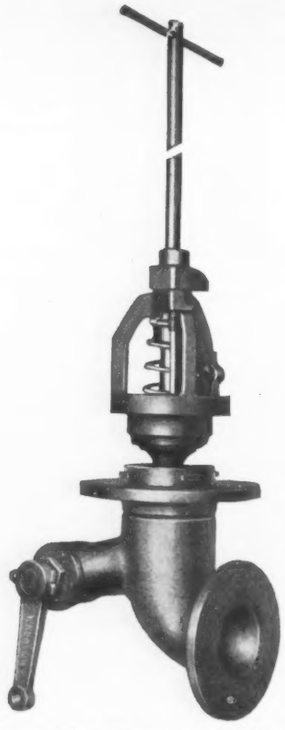
On the following three pages are shown the Wheaton Fittings for Truck Tanks and Bulk Plants which will be exhibited at the National Motor Truck Show

SAVE TIME AND RISKS IN



This streamlined truck tank not only has the most modern design—it has the most modern fittings. It is equipped with the new Wheaton Type 210 Emergency Valve, Type 530 Selective Multiple Valve, Type 510 Emergency Valve Operator and Type 196 Vent Valve—a complete set-up for fast, easy, safe operation.



Type 210 Emergency Valve

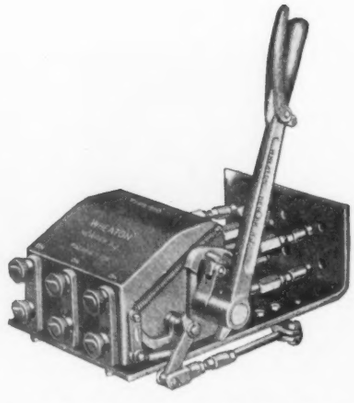
Saves time and work in maintenance. Internal mechanism can be removed for repairs without steaming out truck tank or removing entire valve. For underneath operation. Type 211, similar to Type 210, is for overhead operation.

Type 196 Vent Valve

Gravity-operated pressure relief valve prevents loss of contents if truck overturns, and prevents rupture of tank in case of fire. Lower part of body can be inserted through hole in manhole with top outside manhole.

Type 530 Selective Multiple Valve

Drains truck tank compartments one at a time—without danger of contamination, mistakes or tampering. Selector dial affords simple, quick operation. Installed at an angle—assuring complete drainage of piping, valve casing and valve cavities.



Type 510 Emergency Valve Operator

A set of knobs (connected by selector shafts and cables to emergency valves) gives selective remote control of any individual valve, or combination of valves. To open valve, just pull operating lever; to close, release trip. Fusible link releases lever in case of fire.

DELIVERIES WITH WHEATON

TRUCK TANK FITTINGS

Type 33
Truck Tank Faucet

A 22½° streamlined truck tank faucet—designed especially to prevent hammer and chatter. Soft closing action. Full, fast flow. Prevents kinking on hose deliveries.

Type 133
Truck Tank Faucet

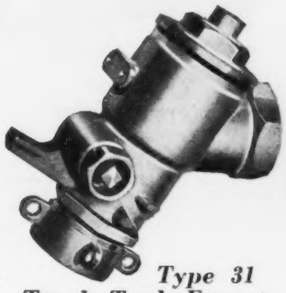
Has the same features as Type 33 (shown at left) except it is a 65° faucet, used where bucket deliveries are made in addition to hose deliveries.

Type 233
Truck Tank Faucet

Has same advantages as Type 33 and Type 133 (shown at left), but is a straight type for use with meter installations, and where space does not permit a faucet with offset outlet.

Type 95
Vent Valve

For installation on the inside of the dome, or dome cover, of each tank compartment. This is a positive action vent, complying with safety regulations under abnormal conditions.



Type 31
Truck Tank Faucet

Designed to give exceptionally speedy flow. The packing nut is below the valve seat—it prevents leakage at this point when the valve is closed.

Type 333
Truck Tank Faucet

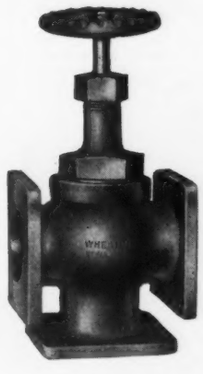
A streamlined straight type faucet, adaptable for use on meter trucks. Gives full, fast flow. Speeds up work.

Type 36
Quick Hose Swivel

Makes it unnecessary to screw delivery hose onto faucet every time a connection is made. To connect, just slip the two slots of swivel over lugs on adapter (attached to faucet) and give the swivel a part turn.

Type 34
Quick Hose Swivel

Has same advantages as Type 36, except it has three slots instead of two, providing strong, tight connections without the need of handles.

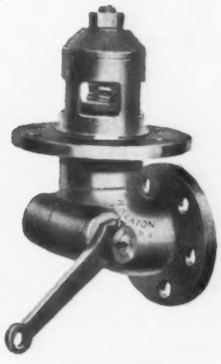


Type 220
Cross Valve

Has all flanged connections, so that valves can be bolted end-to-end, to form a compact manifold for truck tanks, and pump installations.

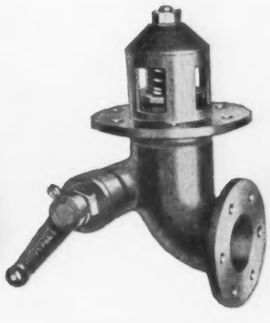
Type 504
Emergency Valve

Elbow type emergency valve, with male threaded inlet, and female threaded outlet. Full flow is provided, as inlet threads are a pipe size larger than the outlet threads.



Type 505
Emergency Valve

A flanged elbow type emergency valve for underneath installation. Can be used with Type 510 or Type 512 Emergency Valve Operator.



Type 200
Emergency Valve

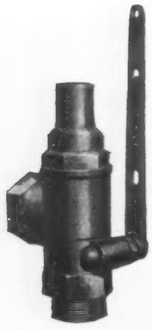
Has a leak-proof stuffing box —made possible by double packing glands, which are always under constant pressure by the tension of the spring between the two glands.

Type 151
Wet Hose Nozzle

Equipped with a dual valve which permits easy opening and even flow. Its design prevents kinking of the hose.

A. W. WHEATON BRASS WORKS, NEWARK, N. J.

If they're* Wheaton *they're safe



Type 25 Loading Valve

Self-closing angle valve for end of gravity systems. It is *counter-balanced* — which makes the closing action slow, smooth and easy. Spider can be supplied.

Type 26 Loading Valve

Differs from Type 25 only in shape. Type 26 is a straight valve for use in mid-line location in gravity systems.

Type 125 Loading Valve

Self-closing angle valve for end of pressure system lines. Opens easily and closes quickly, without hammer, chatter or knock. Protects pump casings and meters. Tops off perfectly. Prevents spillage. Speeds up loading.

Type 126 Loading Valve

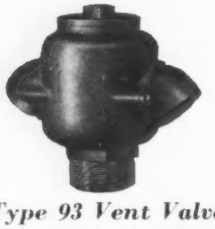
Same as Type 125, with same features, except it is a straight valve for mid-line location in pressure systems.

Type 225 Loading Valve

A new style pressure loading valve. Can be used on either gravity flow or at high pressures. Provides quick closing without hammer or chatter.

Type 92 Vent Valve

One unit embodies normal pressure relief valve, emergency safety relief valve, vacuum valve and flame arrester. Reduces evaporation loss and gives full protection required by law. Supplied in 6-inch size only.



Type 93 Vent Valve

Assures perfect supply and expulsion of air. Valves have ground seats—absolutely air-tight when closed. Wire screens exclude flames.

Type 94 Vent Valve

Provides emergency safety relief only. Equipped with flame arrester. Supplied in 6-in. and 10-in. sizes.

Type 97 Vent Valve

The finest vent made for control of pressures and vacuums in storage tanks. Removable weights permit operation from 4 ounces to 2 pounds pressure. Drain prevents condensations collecting. Contents can be measured through gauge hatch.

THESE Wheaton FITTINGS MEET EVERY BULK PLANT NEED

—and meet it with 100% efficiency

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Goodall-Mechanical Corp.
Los Angeles and San Francisco, Cal., Seattle, Wash.
Salt Lake City, Utah; Phoenix, Arizona

Canadian Mfrs. and Distributors

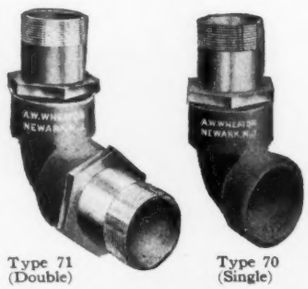
Empire Brass Mfg. Co. Ltd., London, Ont.

Type 100 External Valve

Can be installed on any storage tanks now in use—easily, quickly and at low cost. Just remove fitting from tank outlet and screw Type 100 into tank flange. Held open by No. 43 Fusible Wrench.

No. 43 Fusible Wrench

Supplied with Type 100 External Valve. In case of fire, fusible metal in socket insert melts, releases stem and closes valve automatically.



Type 71 (Double) Type 70 (Single)

Swing Joints

All bronze. Ball bearing. Remarkably smooth swinging. Saves strains and leaks in the pipe line.

Type 65 Standard Anti-Freeze Drain Valve

Installed through side of tank, or through bottom. Valve seat is inside tank—the valve always *drains dry*. There is no freezing, breaking or leaking.

Type 67 Special Anti-Freeze Drain Valve—with Needle Valve

When drain valve is closed, gasoline enters opening in elbow, displaces water and prevents freezing. When drain valve is open, needle point closes opening in elbow, excluding gasoline and draining only water. Can be installed at any height on the side of the tank. The valve seat is *inside* the tank—the valve always *drains dry*.

per cent of the tax-paid gasoline sold in California.

An eight-day hearing was held recently at Los Angeles in connection with the Interstate Commerce Commission's first major investigation of truck transportation of petroleum products, which went into the movement of gasoline and kerosine from Los Angeles Basin to Arizona points.

The truckers are seeking an increase in the present rail rate of 33 cents per hundred pounds. In 1927, the rate was 80 cents, and a few years prior to that was $1.04; but, as trucks came in, the rail rate was reduced to 70, then to 45, then 35 and finally 30, with the freight increase moving it back to the present 33 cents. The rails, contending that their costs yielded a substantial profit at existing rates, opposed the rate advance proposal.

THE rails have gained slightly since their rates came down to the truck level in 1936, so that for the fiscal year ending June 30, 1938, the rail carriers hauled 66 per cent and trucks 34 per cent, of a total 95,834,000 gallons shipped from California to Arizona.

At the other extreme in California, there was the case a few months ago of the ICC ordering an oil trucker (Lang Transportation Co.) hauling from northern California points into Utah to raise his rates so that the rail carriers could "compete" without cutting to the truck level. The rails had asked permission to cut their rates to meet the truck competition. But the ICC ordered the truckers' rates to be raised at least to the rail level and, in one instance, to maintain them at 5 cents per hundred pounds over the rail rate.

Generally speaking, the 10 per cent general increase in rail rates on March 28, 1938, coming on top of a 15 per cent increase Nov. 15, 1937 (the 1937 rate advance was not applied to Southern Territory), has speeded up the trend to trucks in many sections, especially where water transportation was also available.

Typical of these states was Indiana, which is bounded by barge terminals along the Ohio River, lake terminals at the northeastern and northwestern corners of the state, pipeline terminals and refineries in the Chicago area, and a new gasoline pipeline cutting diagonally across the state.

Currently, there are reports that several of the major companies marketing in Indiana are considering going over to truck transportation. Definite steps are said to have been taken already for one company to truck to virtually all of its bulk plants in the state.

Speaking before the Indiana Independent Petroleum association at Indianapolis Oct. 12, Russell S. Williams of Indianapolis, Bonded Oil & Gas System—an independent marketing company which has one of the largest gallonages in the Hoosier state—declared that the marketer receiving his shipments by rail was in a difficult position now with so many of his competitors using lower-cost truck transportation.

"Nub of the problem," Williams said, "is that the railroads have ceased to be competitive, not only refusing to meet the competition of gasoline pipelines, barges and transport trucks, but even as late as a few months ago, further increasing their rates."

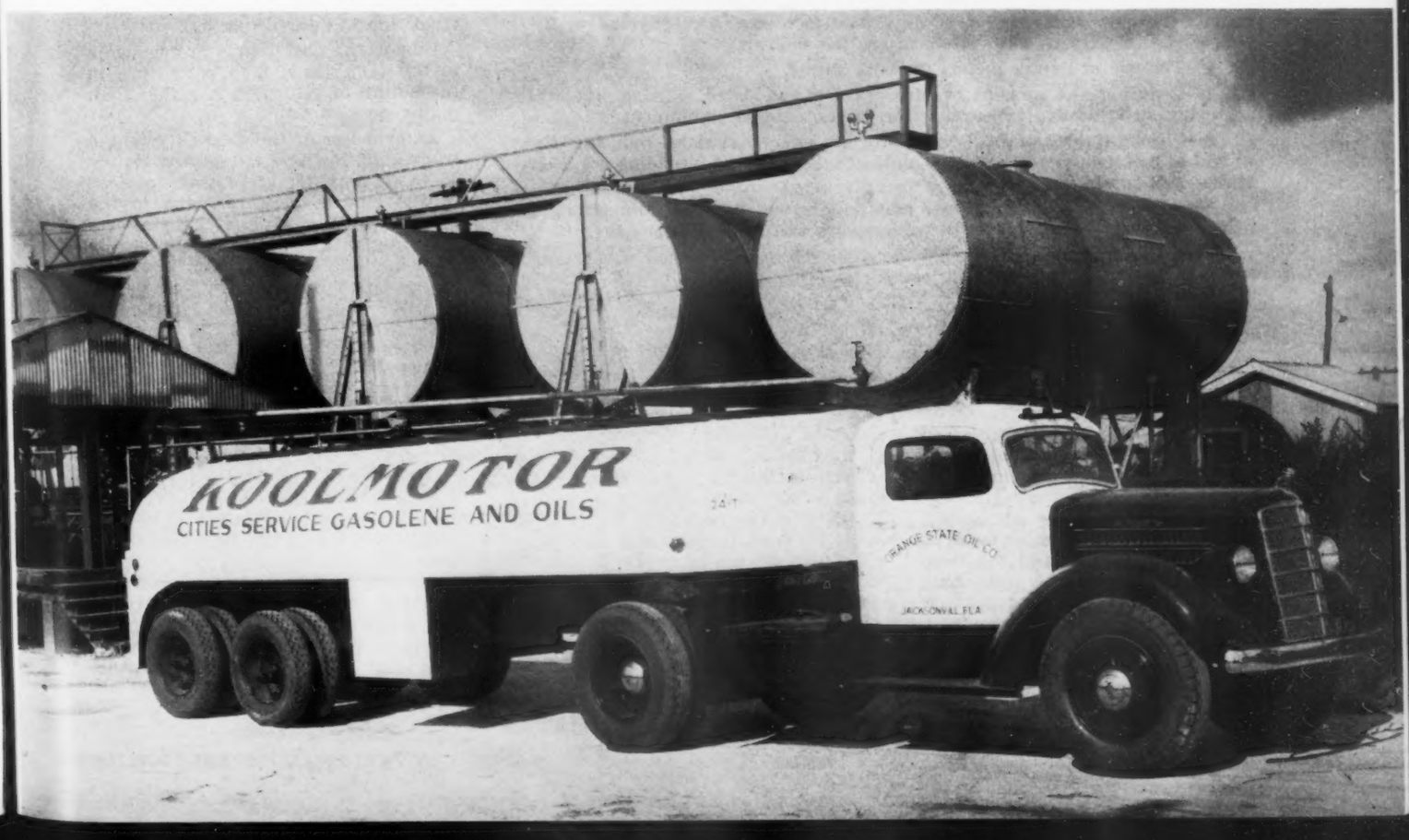
Real solution of the problem, according to Williams, would be for the railroads to cut their rates from the Southwest so that rail-shipping refiners and their customers could compete on even terms with companies using pipelines, barges and trucks.

Once upon a time—and not so long ago at that—the railroads *did* propose a deep rate cut from Gulf ports and southwestern refining points to Ohio river crossings, which might have kept some of the oil tonnage from leaving the rails for the waterways. But the rate cut plan never got beyond the proposal stage, although some railroad traffic men have mentioned it recently, perhaps with some regret that it was not made effective.

BACK in the spring of 1936, the Southern Freight Association (representing railroads in southern freight territory, which roughly corresponds to the area east and south of the Mississippi and Ohio rivers, respectively) proposed a reduction of about 40 per cent in rates on gasoline and kerosine from Gulf ports, Memphis, and St. Louis, with corresponding reductions from southwestern refining points, which would include Texas, Arkansas and Oklahoma. Rates to destinations were to be observed as maximum rates for

(*Continued on page* 122)

This transport truck is one of many owned and operated by Orange State Oil Co., which is one of the largest Independent oil marketers in the U. S., with a gallonage running well over 25,000,000 a year and more than 50 bulk plants scattered over Florida. Buying in cargo lots, with tankers docking at its own ocean terminals and barges hauling inland, Orange State last year shipped about 98 per cent of its gallonage by truck from marine terminals. Company headquarters are at Miami, with John E. Fenn as general manager



More Payload to Weight Trend in Truck Design

This 3500-gallon truck and trailer unit, now owned by the Modern Heat & Fuel Co., Philadelphia, shows how a continuity of design can be built into a job to give it a unified appearance

By John W. Thompson
N. P. N. Staff Writer

Among the important developments in truck tank engineering, in the past year, in the shaving off of dead load to allow more payload in the transportation of petroleum products are the following:

1—The use of lighter metals for tank sheets.

2—Reducing the amount of streamlining and extra skirting but still achieving an attractive appearance for the automotive equipment.

3—Through the use of lighter and stronger materials, reducing the weight of meters and other fittings on the tank truck and providing for their taking less space.

4—Introduction of entirely new tank designs which increase the strength of the tank but reduce the weight of supports and bolsters necessary.

These are described in the accompanying article and their application to the problems of oil marketing companies is discussed.

FORTUNATE is the truck operator who knows how to select a tank truck to fit his particular operation; for today, more than ever before, the scientific selection of trucks with its attendant reduction in operating cost, can pay dividends to the oil man who knows the type and size of truck he needs.

Thanks to the truck manufacturer, the truck tank builder and the makers of auxiliary tank truck equipment, there are available tank trucks to fit a wide variety of requirements — units that can be engineered and designed to suit the "personality" of practically any operation, no matter how large or how small.

Today a tank truck is something more than a tank strapped on the back of a truck chassis. It is an economically engineered pattern of such elements as two-speed axles and multi-speed transmissions, semi-trailers, trailing and powered third axles, stronger and lighter metal alloys, meters, pumps, emergency valves, manifold selector valves, streamline piping and fittings, dual wheels, compensating axles, and many other items.

It is the wise selection and assembly of the component elements that go to make up the most efficient tank truck for the particular job.

During the past year, improvements in the tank truck field have been in the nature of refinements, rather than major developments.

As evidence of the flexibility in the truck chassis, there are approximately 40 truck manufacturers making close to 800 models. However, due to the current practice of interchanging engines and frames, there are probably close to 2000 truck models available to the truck buyer.

FOR example, one truck manufacturer offers 20 chassis models based on 7 different engines, 8 rear ends, 11 front ends, 7 transmissions, 53 separate wheelbases, 7 frames, and 33 gear ratios. This unit flexibility which permits "tailoring" a truck to a job is typical of the variety of combinations offered by many manufacturers.

Even the high-production, low-priced trucks now offer many unit combinations. One well known manufacturer has just introduced his 1939 truck line, which includes 42 body and chassis types, two clutches, five transmissions and eight rear axle ratios. In

addition, various wheel and tire sizes may be chosen.

The increasing use of high tensile steel and aluminum in the fabrication of truck tanks proves the contention of many that blue annealed steel sheets will soon fade from the picture as the dominating material. Weight saving continues to be a primary consideration, both in the design of the retail and bulk haul types of tank trucks.

An eastern company, well known for its development and manufacture of lightweight streamlined railroad equipment, is reported to have made up some experimental truck tanks which are in use by an oil company in the east. They are semi-trailer jobs, of the frameless type, made of stainless steel and, although they each carry 4500 gallons, the vehicle weight is said to be only 5600 pounds.

It costs just as much to move structural weight over the highway as it does payload weight. The structural weight, however, costs money while the payload brings in an income.

No streamlining on this 3200-gallon retail gasoline truck. Instead its payload from front to rear

ONE of the newest metals under consideration for use in truck tank fabrication is a magnesium alloy. This material is one-third lighter than aluminum and weighs only one-fifth as much as steel. One manufacturer has been called upon to make large magnesium castings for a truck operator who figures that the saving in weight will return to him the extra cost of the lightweight casting in one round trip. Recent developments in the production of magnesium have brought down materially the cost of those alloys, according to reports.

Ever-increasing evidence points to the decline of the ultra-streamlined tank truck. As this type of unit grew more common, its advantage from a sales promotion standpoint diminished, with the result that a number of oil companies are now returning to a more conservative streamlining design on new equipment.

One of the nation's largest oil companies, after a two-year program of extensive streamlining, has now returned to a more conservative attitude, after seeing the merchandising edge of such equipment blunted by too wide adoption of such designs.

One of the large eastern oil companies, and probably the largest user of aluminum truck tanks in the country, strips its truck units down to bare necessities. The appearance of these units is that of a tank set on a chassis, with no embellishments. However, with a carefully controlled schedule of painting and cleaning, these units always look neat when seen on the highway. In fact, their skeleton appearance lends to the impression of their being designed for practical purposes entirely.

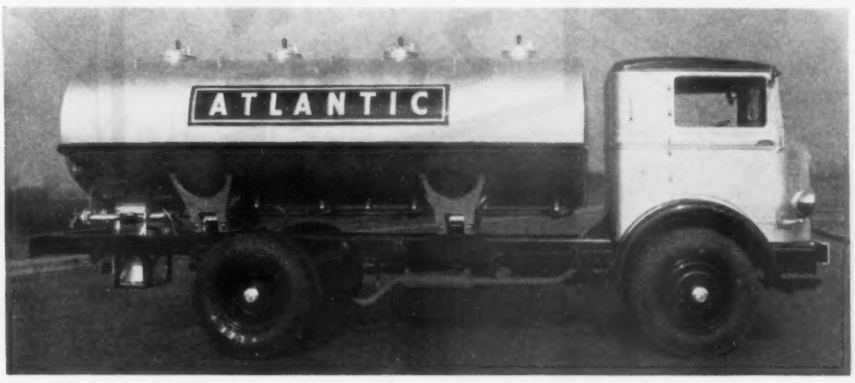
After all, say some, a tank truck is a tank truck, so why make it look like something it isn't.

With its aluminum tanks, stripped of all skirting and streamlining weight, this company's units are able to carry 2200 gallons on vehicles having a total gross weight of 26,000 pounds. A truck of the same gross weight, but with full skirting and streamlining, and with a tank made of steel instead of aluminum, would permit a capacity of only approximately 1900 gallons.

So, by sacrificing streamlining and skirting, each of these units can add 300 gallons of payload. As this company views it, 300 gallons per truck is too large a bonus to pay for the indefinite advantages of streamlining.

In an effort to pare off still more dead weight, this company recently removed all spare tires and tire holders from its fleet. This eliminated approximately 300 pounds per truck and, when measured in terms of the company's fleet of 1000 units, means 300,000 pounds of dead weight removed, or roughly the addition of 50,000 gallons of payload. This economy, the company figured, far overshadowed the cost of breakdowns due to tire failures on the road.

This company, incidentally, has reduced its tire failures 50 per cent, largely through enforcement of the rule of keeping tires inflated to proper pressures. An effort is made to always keep tires up to within a plus or minus two pounds of their prescribed rating.



This 2200-gallon gasoline truck, one of the Atlantic Refining Co.'s aluminum fleet, shows that a skeleton unit, if kept clean and painted, can look trim and impressive. With this type of design, 2200 gallons can be carried on a unit having a gross weight of 26,000 pounds

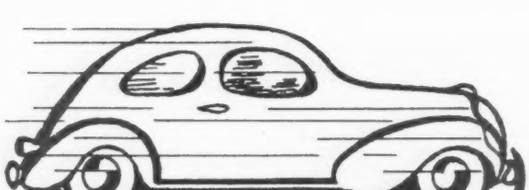
THIS oil company has found that the skeleton type of tank truck appreciably reduces maintenance costs, in that it is easier to keep clean underneath as well as on top, and because the complete accessibility of the tank and fittings permits the maintenance man to quickly spot any leaks or breaks that might otherwise go unnoticed and result in costly road failures.

Returning for the moment to the subject of tires, this item, by receiving proper attention, can result in sizeable savings. Overloading a tire, for example, can be a costly operation. A tire will give 100 per cent of its normal service if its rated carrying capacity is not exceeded, but according to tire manufacturers' tests, the service life begins to diminish rapidly once overloading starts.

A tire only gives 70 per cent of its normal service when it is overloaded 20 per cent, according to the tests, and when overloaded 100 per cent it gives only 25 per cent normal service.

The total tire mileage, of course, is dependent also upon other operating conditions, such as speed, road surfaces, braking, alignment, inflation and repairs.

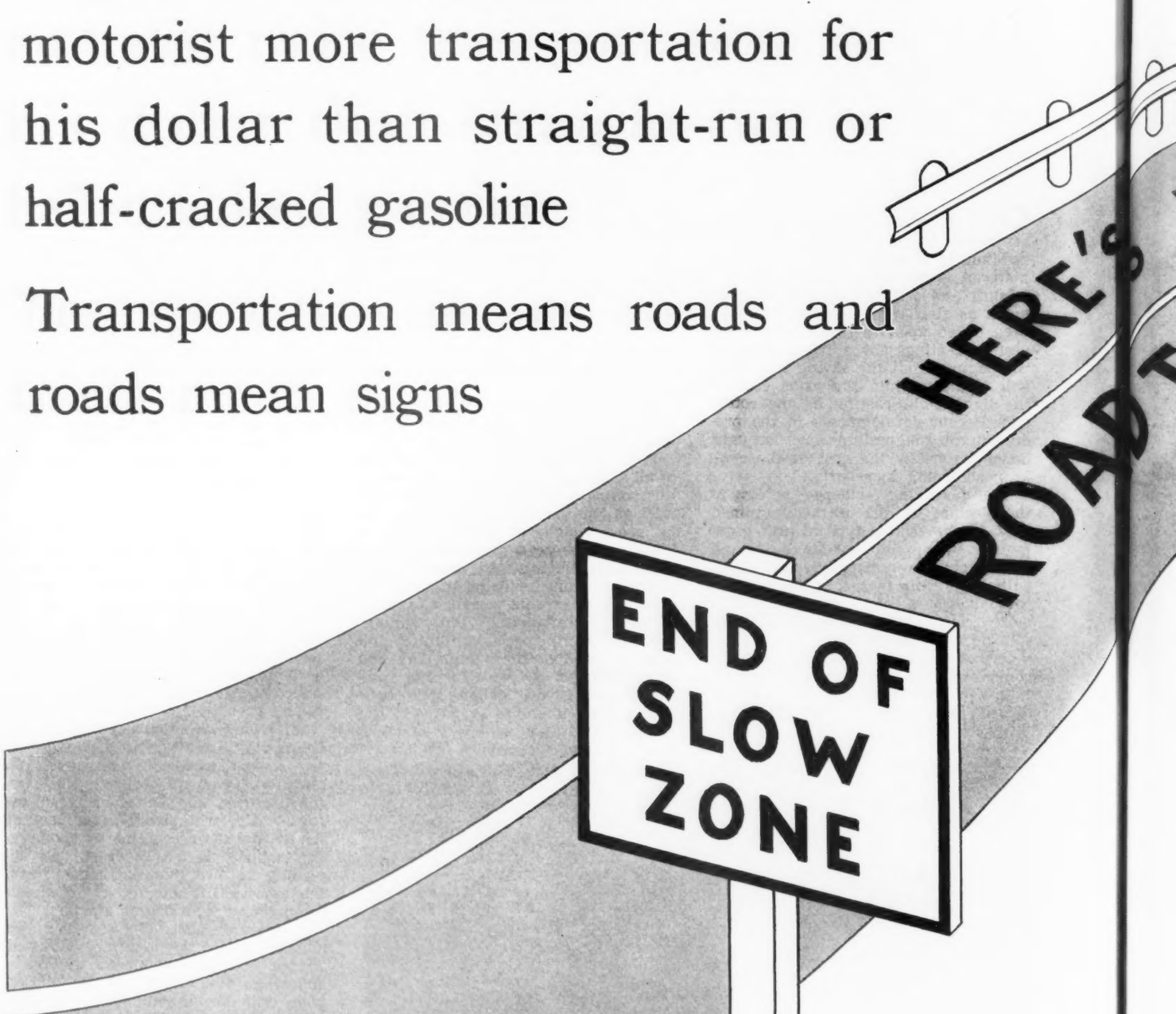
Newest developments in piping and manifolding are aimed at getting



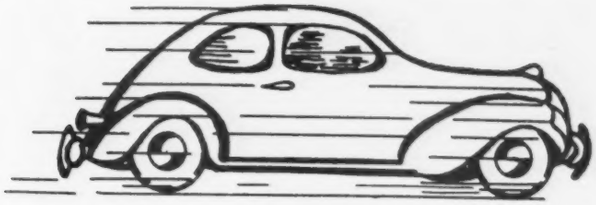
SPEED

Dubbscracked gasoline gives the motorist more transportation for his dollar than straight-run or half-cracked gasoline

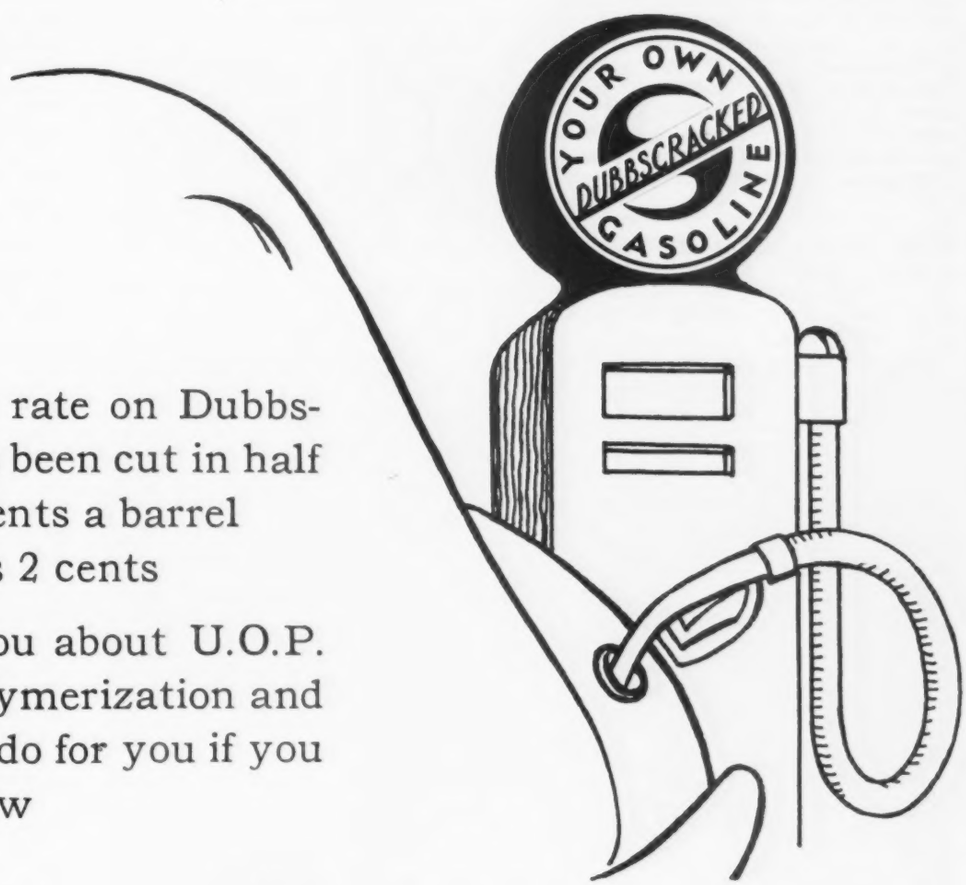
Transportation means roads and roads mean signs



UP!



Dubbscracking
Dubbs reforming
U. O. P. catalytic
polymerization
Selling Dubbscracked
gasoline in sign language

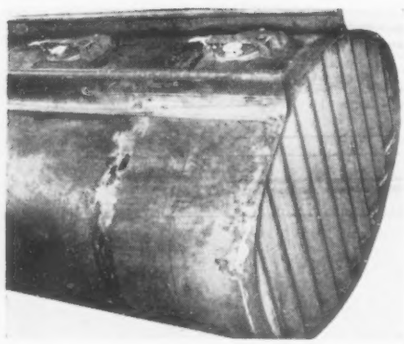


The royalty rate on Dubbscracking has been cut in half
Now it's 5 cents a barrel
Reforming is 2 cents

We'll tell you about U.O.P. catalytic polymerization and what it will do for you if you want to know

Universal Oil Products Co
Chicago, Illinois

Dubbs Cracking Process
Owner and Licensor



The mask shown at the top of this tank construction hides the manhole covers from view, and at the same time serves to prevent oil from running down the sides of the tank. Drain pipes at the end of the tank carry off any slop-over oil. The corrugated head provides a light-weight bulkhead that resists deflection from the liquid load

greater efficiency and maximum performance out of pumps and meters. The use of a multi-way plug valve in conjunction with a manifold selector valve, cuts in half the piping required on a truck tank where meter and pump are involved. On one such installation now being figured by one of the tank builders, this equipment reduced the amount of piping required from 87 inches to 36 inches.

In meters, the use of aluminum alloys has greatly cut down the weight and some manufacturers have intelligently reduced the dimensions and size of their meters and at the same time increased the efficiency, thus making it possible to set the meters and manifolding in a much more compact space.

ONE meter company has developed a unit especially for truck service, the meter, strainer, air release and back pressure valve being combined in a single case.

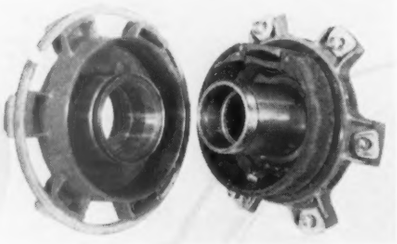
Printing counters are becoming widely accepted for use on tank truck meters, particularly in the fuel oil field, and there is some indication they will spread to gasoline transport trucks and retail delivery gasoline trucks. Already there are installations of ticket printers on meters at bulk plants and water terminal loading racks.

One manufacturer has recently introduced a new emergency valve, in which the internal mechanism can be easily removed and reinstalled, without the necessity of steaming out the tank or removing the entire valve from the piping and compartment outlet. A twist with a wrench unlocks and removes the internal mechanism.

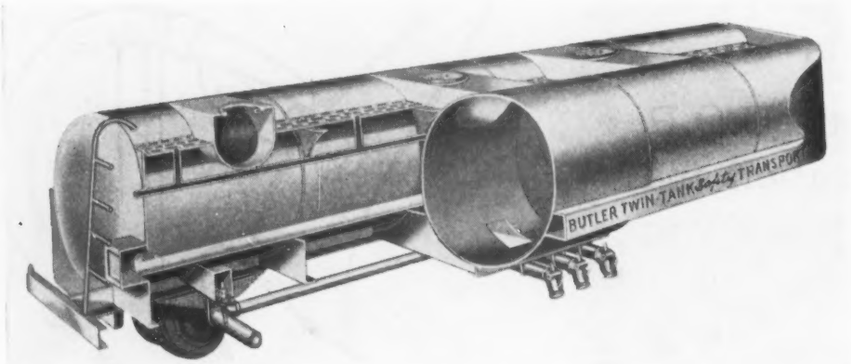
The valve cage is streamlined to prevent restriction in the flow of liquid entering the valve and, according to the company that developed it, actual tests have proved 95 per cent efficiency in flow characteristics at low head pressure. The valve plunger is a floating type, permitting the valve disc to seat evenly and prevent leakage.

The unceasing effort to reduce dead weight in order to obtain more payload has been reflected in the wide acceptance of the frameless trailer in the petroleum transportation field.

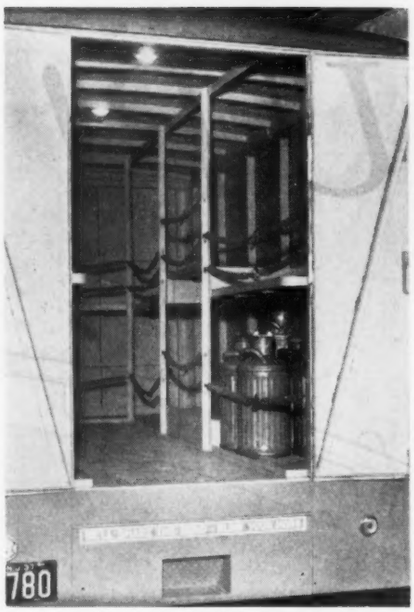
One truck tank manufacturer making such a unit states that a flexible frame under a trailer tank carries none of the beam load, that, owing to its far greater stiffness, the tank must function as a beam and carry not only its own weight but the weight of the payload as well. Thus,



Differential dual wheels, for trailer, semi-trailer and idling third axles, are designed to eliminate tire drag. Here the two wheels are dis-assembled, showing how the outer wheel hub telescopes over the hub of the inner wheel. They form two separate wheels, each rotating independently of the other. A dual braking action provides brakes simultaneously on both wheels



Cross section view of the twin-tank construction, showing how compartments are filled from joint manholes, and emptied from joint faucets. This type of tank, formerly used only for hauling casinghead gasoline, is now finding use in the transportation of regular gasoline



Interior of a Standard Oil Co. of N. J. truck used for carrying bucket and package goods

many trailer tanks today have integral frames designed primarily to afford anchorage for fifth wheel and rear axle assemblies.

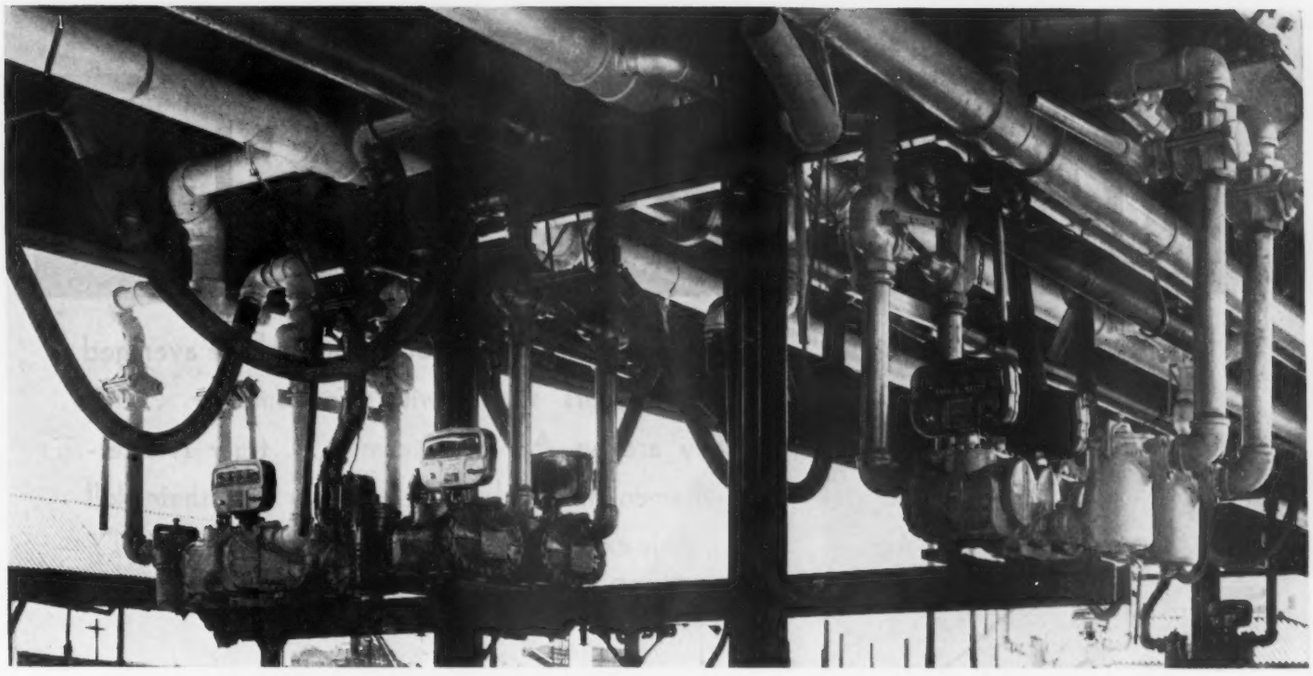
One of the more recent developments in the frameless trailer field is the use of twin tanks, formerly used for transporting casinghead gasoline, in the hauling of regular gasoline. In this type of construction, advantage has been taken of the fact that the tank shape has more practical effect upon its strength as a container and as a beam than does the thickness of the metal in its shell.

One manufacturer's tank, with a shell as light as No. 12 gauge, will carry 4000 gallons of oil without a frame. In place of bolsters, suspension members are provided, somewhat similar to those in frameless trailer tanks. In this company's tank construction, not only the weight of the bolsters, but also that of the sills is saved, although the weight of the tank supports must be added.

IN THIS particular tank design, the understructure consists of supports fastened to the frame about one-third of the way from the rear end of the tank and similar supports about one-third from the front of the tank. The forward supports have a rubber mounting.

Opposite these supports and within the tank shell are tank heads or ring stiffeners, much the same as in the conventional frameless trailer tank design.

The tank heads consist of sheets with deep, vertical corrugations, with no flanges welded from the inside to the tank shell. Company engineers, after testing this type of corrugated tank head, found it highly successful from the standpoint of weight saving



New full-vision counters used on meters at the terminal of the Cities Service Oil Co. at Long Island City, N. Y.

and resistance to deflection from the liquid load in the tank.

Running boards and underslung boxes are supported directly from the tank shell.

This company claims considerable weight saving by the elimination of bolsters and oak sills, and the use of the corrugated heads. For example, in an 850-gallon, 5-compartment tank this saving is listed at approximately 200 pounds.

The advantages of sub-surface loading of trucks continue to be in a pro and con state, but there is much evidence to show that the vapor-saving ability of this method will win for it an ever increasing number of followers.

ONE oil company, in an effort to settle the argument of top loading versus bottom loading, carefully tested the two methods. It was found that with the top loading method, the evaporation loss was 1.86 gallons per 1000 gallons of gasoline, and that loading from the bottom cut the loss to 1.20 gallons per 1000 gallons. The loss by bottom loading represented only 65 per cent of the loss accompanying top loading.

If we assume, for purposes of example, that a 1000-gallon truck makes three complete dumps per day 300 days in the year, the above figures would indicate that 1674 gallons are lost by evaporation each year by loading this truck from the top, and only 1080 gallons by the sub-surface method of loading.

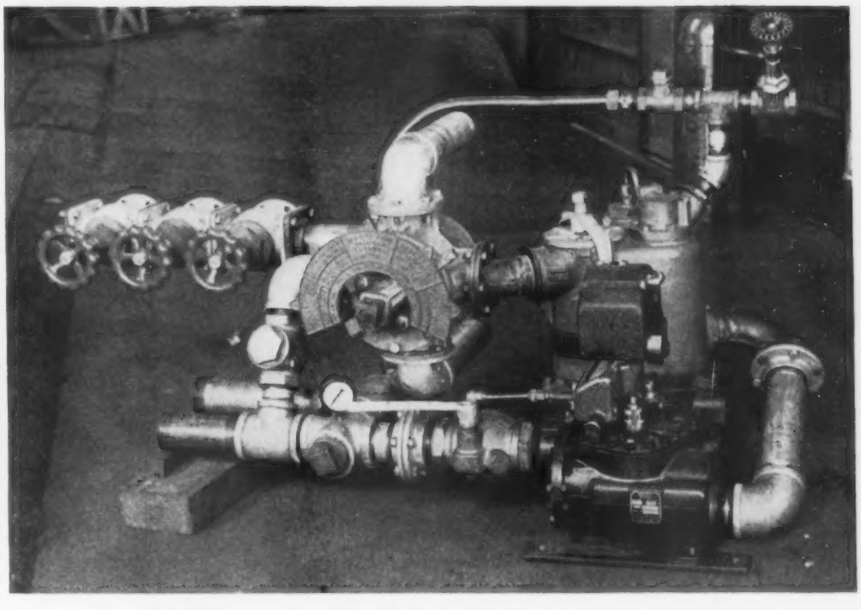
In other words, over a period of a year, the sub-surface loading method represents a saving on this one truck of 594 gallons of gasoline. An appreciable saving.

The diesel-powered truck clings to the transportation scene with the tenacity of the proverbial bulldog, continually gaining ground. Each year finds the automotive diesel engine more flexible, smaller in size, and lighter in weight — features which are vital to motor transport service.

J. A. Gritsch, president of Oregon-California Fast Freight, speaking before a Los Angeles Society of Automotive Engineers group, explained the place of the diesel as follows:

"The ideal application for the diesel engine is a constant speed, constant duty operation in which the cylinders can be made sufficiently large to minimize the effects of normal and inevitable wear in the fuel injection system. The further we depart from these simple conditions, the greater become the problems of design, production, operation, and maintenance of the engine."

In concluding, Gritsch states, "In analyzing any route to forecast the advisability of using diesel engines, the three factors of cost, earning capability and the reaction of the public should all be considered. In general, the places where today's conditions make the odds largely in favor of the diesel are the longer routes where horsepowers under 150 are adequate to maintain economical speeds. Ex-



The pump control valve, shown here, when used with a manifold selector valve, can reduce by 50 per cent the amount of piping required for a fuel oil truck

MASTER CRAFTSMEN

Erection shop foreman (above) A member of Farrell Organization for 21 years

Key men in the Farrell organization have averaged over 17 years' service with this Company . . . They are an All-Star team . . . truly Master-Craftsmen in metal. Their ability . . . their skill . . . their experience . . . build EXTRA QUALITY and EXTRA VALUE in every Farrell truck tank.

Because each job is tailor-made by experts through every stage of production . . . you get more for your money when you buy Farrell equipment

Welding foreman (at right) with Farrell 28 years

Layout foreman (above), a veteran of 21 years' service

Machine shop foreman (above) with Company 18 years

Plant superintendent (left) with Farrell 31 years

Engineering department. Average service 5 years

in METAL!..

It will pay you to get facts and figures from Farrell before buying truck tanks. Because Farrell tanks give you sturdiest construction . . . beauty of design . . . maximum safety . . . dependability that insures economical operation.

Assembly shop foreman (above) With this Company 28 years

Assistant welding foreman (at right) With Farrell 21 years.

Paint shop foreman (above) Seven years' service

Write, wire or telephone today . . . or, better still, drop in at our plant for a thorough discussion of your truck tank needs with key men in our organization.

FARRELL

MANUFACTURING COMPANY

JOLIET - - - ILLINOIS

tremely mountainous routes are questionable, and the short hauls are definitely out because of the changes in economic factors which are almost inevitable before the investment in power plants for such service could be amortized, and because of possible hostile public reaction in metropolitan areas."

One of the most recent developments in the diesel field is the announcement by a manufacturer of well known quantity production trucks of a new diesel-powered 3-ton truck.

Claims for this new unit include elimination of 'diesel knock', smoking and starting difficulties. Because it found that diesels are most profitable in heavy duty continuous operations, this company has developed its diesel for 3-ton trucks rather than for lighter models.

AMONG the advanced engineering features included in this new diesel are: an automatic injection advance, which times injections according to engine speeds to assure top fuel economy at all speeds up to the maximum; a simplified injection pump employs only one valve that meters exactly equal amounts of fuel to all cylinders; a pressure-controlled pintle cleans the anti-clogging nozzle after each injection, eliminating dribbling; starting aids are said to be unnecessary under ordinary conditions because of an intake air heater located in the air intake manifold which is controlled from the dash board, set according to temperature and automatically shuts off to save the battery.

Comparatively new in the truck field, but indicative of the initiative and improvement constantly taking place, are differential dual wheels which the manufacturer claims will effect a minimum of 100 per cent economy in tires and 10 per cent in gasoline.

The differential dual wheels eliminate tire drag. Instead of locking the two tires together on a single wheel, the tires are freed by mounting them on separate wheels, one within the other (telescoping hubs). At the same time, dual wheel braking is provided. A clutch member within the wheels, operated by brake pressure, locks the two wheels together for equal and simultaneous braking on all tires.

The principle of differential action, or independent rotation of dual-tired wheels, is not new. As early as 1925, this company experimented along this line, but it was not until this year that independently rotating wheels became commercially available.

These wheels are universally applicable to all trailers and third axle trucks. They require no special axle construction and fit any dead or trailing axle.

Most oil company automotive superintendents will agree that, since the Iowa Plan went into effect, trucking costs to retail outlets have had a tendency to rise. The effect of the plan has been for dealers to limit their purchases of gasoline supply to immediate needs in many cases, with the result that more frequent trips have to be made to the station and smaller dumps dropped at each delivery.

This situation has been a challenge to the resourcefulness of truck operators, and in many cases closer scrutiny of truck operations has enabled oil companies to keep these costs down to their former level, and even below their former level in some remote cases.

ONE oil company automotive superintendent has been able to continually cut operating costs in the last few years by, (1) using fewer and larger trucks, (2) paying closer attention to routing and scheduling, (3) cutting out the fringe or marginal accounts (outlying dealers who require a long haul and take only small quantities), and (4) following a definite maintenance and upkeep program on the fleet.

Even in its present highly developed state, there are still many problems yet to be solved in the transportation of petroleum products by truck. Among these problems are, what is the most economical number of compartments in a truck tank for a particular job, and what is the most practical truck and truck tank size for a given type of operation.

But in this swiftly moving industry, it is safe to say that such problems as these will be solved. Engineering ingenuity is sparing no effort to provide the most efficient truck for the job.

The cab-over-engine type of unit is finding favor among operators of domestic fuel oil trucks because of its better maneuverability. This is an 1800-gallon unit, owned and operated by the oil burner division of Hochschild, Kohn & Co., a Baltimore department store

The new and the old meet in Connecticut. This range oil peddler was required by law to equip his "truck" with a meter, as are all other fuel oil and range oil truckers in that state. The meter can be seen at the side of the wagon between the wheels. A 275-gallon tank is located inside the wagon

New Problems Encountered In Local Deliveries

WHILE bulk plant to service station transportation has been with the oil companies since stations were first built, the Dealer Marketing Plan is having some effect on the nature of delivery systems, since it has largely increased the number of outlets at which deliveries are controlled by the retail outlet rather than by the supplying company.

Along wih this change in the manner of operating the stations themselves has come an increase in the amount of varied merchandise handled at the stations. Tires and batteries have been taken on and other automotive accessories, sometimes outside lines. The oil company in many cases has to include with its deliveries of gasoline and motor oils, items of automotive merchandise to replace the station's stock.

So the problem in connection with its local deliveries to stations and other outlets has been complicated for the oil company; but certain trends in the development of automotive equipment to serve this need of the oil companies seem to be taking place to meet these problems. The truck tank builders are providing space, along with the tank itself, for the more varied merchandise the oil companies handle. In some sections of the country, meters are coming into use as standard equipment for trucks in local delivery service, saving delivery time and insuring to the dealer or station lessee that he is receiving delivery of the amount called for on the tank wagon ticket.

In the days of company-operated stations, and even now for jobbers operating their own stations, gasoline deliveries to such outlets could be scheduled for the convenience of the bulk plant. Dumps could be made during otherwise dull hours for the trucks. If a dealer ordered a partial load the truck could be fully loaded and the remaining gasoline dropped at a company station on the return trip, so the truck could return light to the bulk plant.

With the Dealer Marketing Plan such convenience dumps have largely been eliminated, and the lessee joins the ranks of the dealer, as far as transportation is concerned.

A recent survey by NATIONAL PETROLEUM NEWS shows that jobbers are meeting current delivery problems by a variety of methods. Some jobbers place products in lessee stations, also with dealers, on consignment. Others place trucks on definite routes reaching each outlet a given number of times weekly. Others fill orders as received, endeavoring to have dealers and lessees take full or at least compartment loads.

With consignment deliveries an advantage is claimed in the retailer always having a sufficient inventory on hand, so that no customer has to be turned away from the pump island because storage tanks are dry, and in emergency deliveries being eliminated. Also, the supplier, by watching deliveries and sales, blocks a competitor dumping into the retailer's tanks.

With scheduling of routes on a regular basis it is claimed the retailer does his own buying, knows when the supplier's truck will stop and orders accordingly. By the rigid adherence to such a system emergency deliveries can be eliminated also.

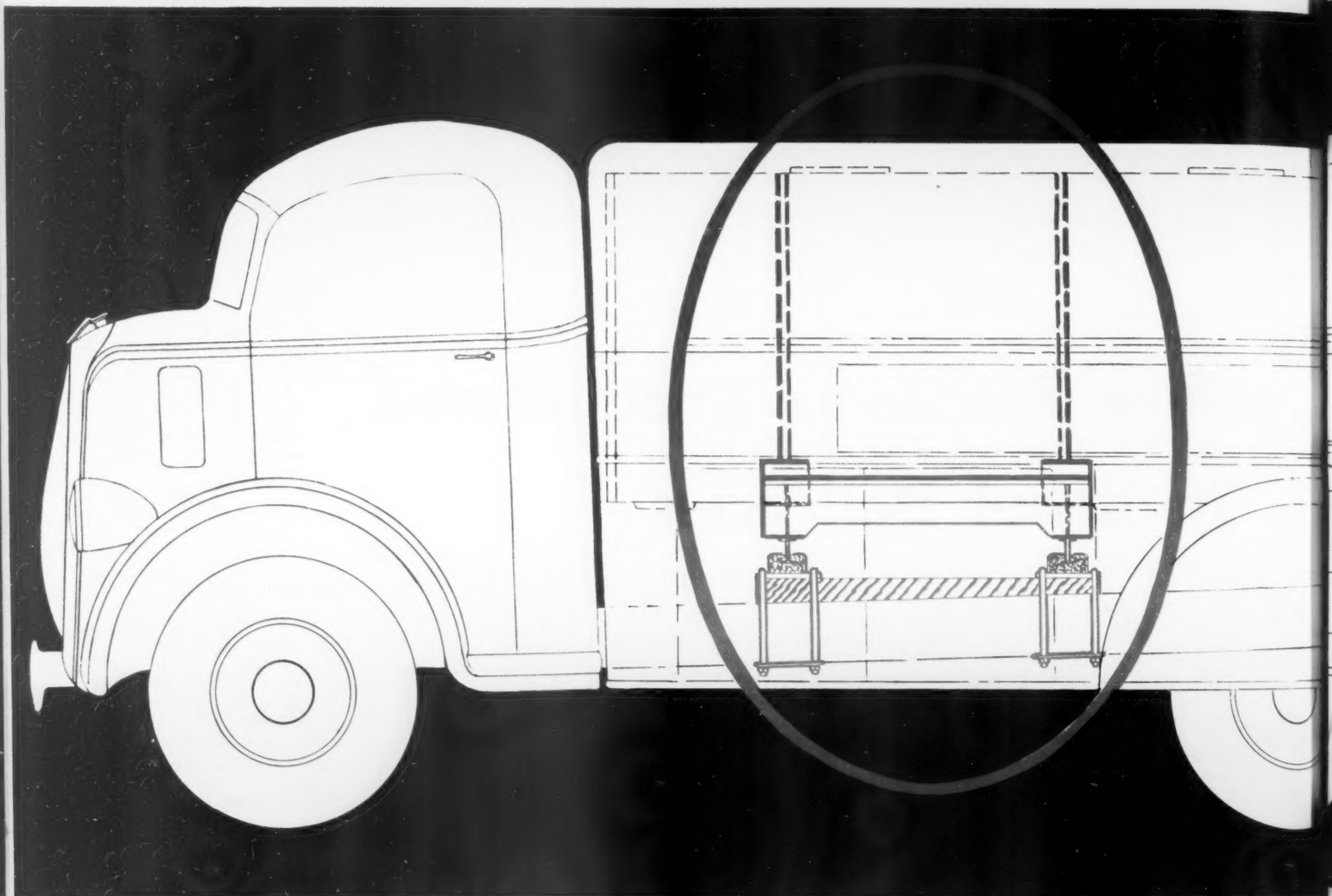
FOR the filling of orders as received, the bulk plant serves as a dispatcher of trucks. When a retailer telephones an order for a compartment or two the plant dispatcher calls other retailers on the truck's route and solicits orders to make up a full load.

Another factor in service station transportation is truck transport hauling from refinery or marine terminal storage, with some loads by-passing the bulk plant and dumping direct to

Be Sure To See

THE DAVISBILT

A RADICAL CHANGE IN TRUCK



WITH pardonable pride and enthusiasm we announce — The Davisbilt "Beamtank"! — so named because the tank, itself, is used as a beam to carry its own load.

This radical change in design and construction results in a material reduction in weight, increased strength, improved appearance and serviceability, plus a reduction in maintenance.

As illustrated in the detailed sketch, the understructure consists of supports fastened to the frame about 30% from the rear end of the tank and similar supports about 30% from the front of the tank. The forward supports have a rubber mounting of standard design and improved construction. There are also oak cushioning straps under both front and rear supports.

If you want to carry bigger loads safely and at less cost, get full details of this super job—now.

THE DAVIS WELDING & MFG. CO., CINCINNATI, OHIO

Other Sales Offices

NEW YORK
103 Park Ave.

CLEVELAND
385 Rockefeller Bldg.

CHICAGO
35 E. Wacker Drive

DETROIT
432 St. Aubin

ST. LOUIS
Louderman Bldg.

WINNIPEG
Western Steel Products Corp., Ltd.

TORONTO
Metallic Roofing Co., Ltd.

MONTREAL
Geo. W. Reed & Co., Ltd.

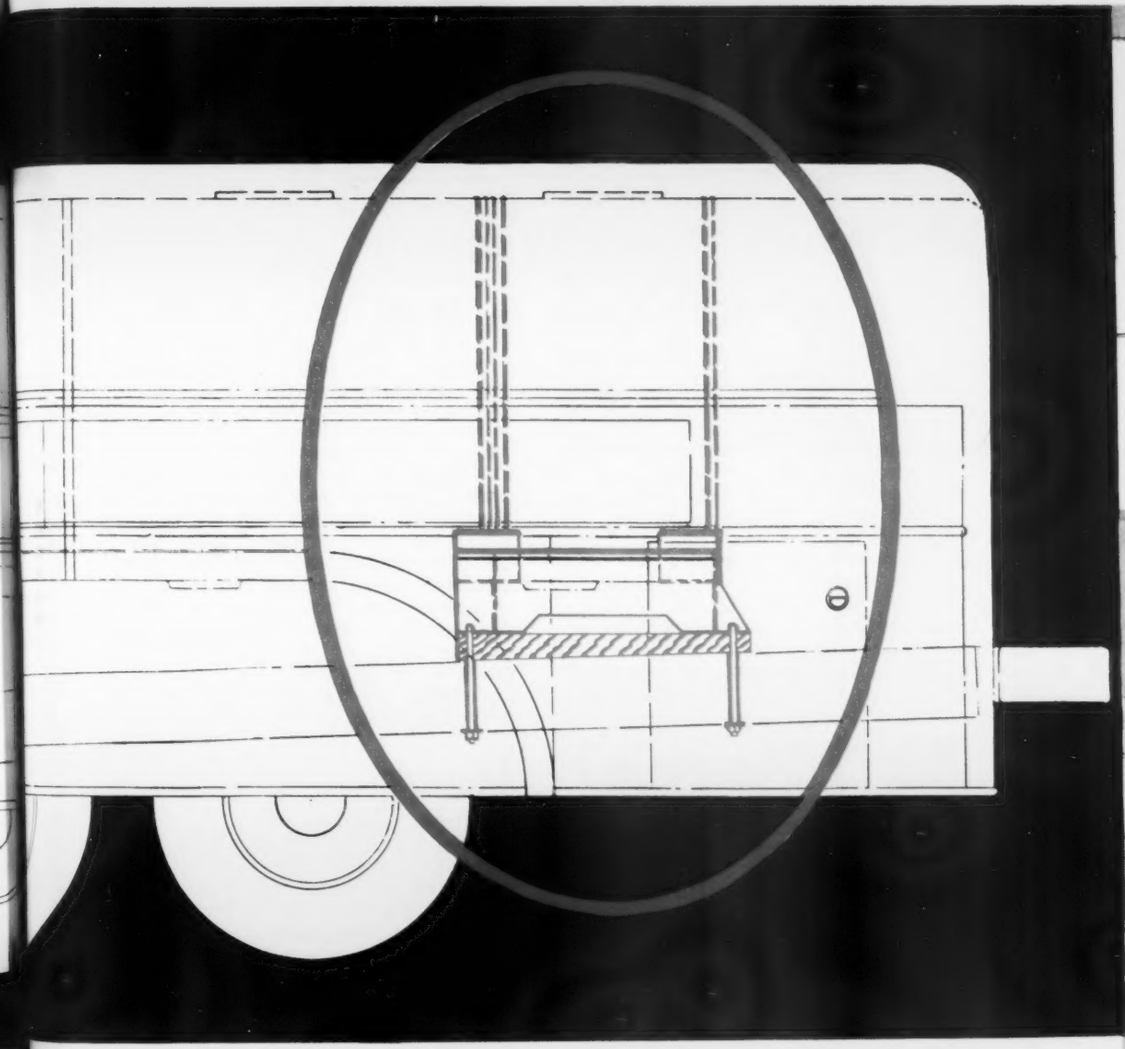
WASHINGTON, D. C.
1042 Wisconsin Ave.

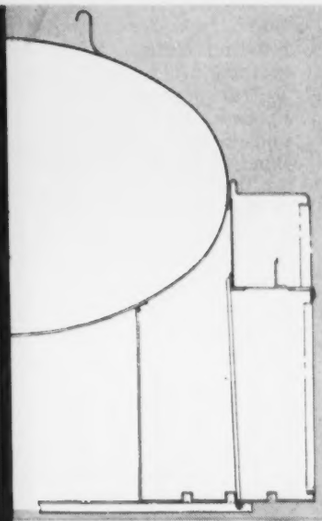
BUFFALO, N. Y.
320 Jackson Bldg.

CHARLOTTE, N. C.
1730 N. Tryon St.

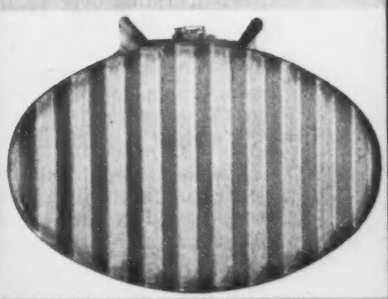
"BEAMTANK"

TANK DESIGN *and* CONSTRUCTION

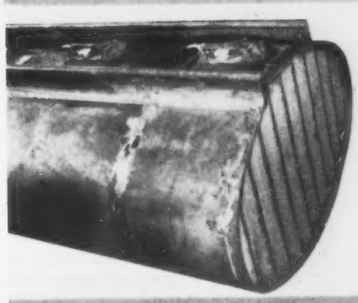




● **RUNNING BOARDS AND UNDERSLUNG BOXES** supported directly from the tank shell. Stronger support is achieved because bolsters and sills are eliminated. No bolster interference. No hold-down bands to keep tightened.



● **"CORRU-HEAD" CONSTRUCTION!** Of sheet metal with deep vertical corrugations having no flanges and welded from the inside to tank shell. Proved to be lighter in weight, yet stronger and more effective in resisting deflection from liquid load.



● **"WELCH MASK", OR CAT WALK FLASHING,** as modified for incorporation in BEAMTANK construction—catches any slopping of oil. Drains from either side through drain pipes.

Also shown is "Smooth Skin" style shell furnished without extra charge except on jobs where exterior soldering is required.

DAVISBILT "BEAMTANK"

PATENT APPLIED FOR

● ***Responsible Representatives***—in territories as yet uncovered, are urged to write Home Office, Cincinnati, Ohio, regarding valuable Davisbilt Products franchise.

retailer or consumer accounts. Jobbers who are transporting reported that direct dumps are made only when the retailer's or consumer's storage will take a full load. Equipment requirements in such cases are large capacity storage tanks with large fill lines, generally three-inch in diameter. With transports the jobber shuttles the equipment between trips filling storage at retail outlets and bulk plants and handles deliveries to stations that cannot take transport loads with smaller delivery trucks.

The Stevens Oil Co., jobber at South Bend, Ind., for example, has a combination transport and delivery truck method of keeping accounts supplied. A transport of 3048 gallons capacity operates between a terminal in Gary and the company's bulk plant in South Bend. Dealer accounts outside of South Bend, and several accounts within the city, are supplied direct by the transport, but in all cases full loads must be taken.

For other accounts in South Bend the company operates a 614-gallon truck out of the bulk plant. Dealers telephone orders, which are filled within a maximum of about two hours. Full dump orders account for about 90 per cent of the trips, it was said. On orders for less than full dumps the plant warehouseman checks with other accounts in the vicinity of the truck's trip to make up if possible a full truck load.

ANOTHER jobber operating on the order method is the Milwaukee Badger Oil Co., at Milwaukee. Truck drivers keep operating over virtually the same territory, but orders are obtained by the plant manager calling all resale and consumer accounts daily. Some calls are made in the morning, others in the afternoon, depending on when the station managers are on duty.

Three trucks, of 500, 700 and 1000-gallon capacities, are in gasoline delivery service, and except in emergency cases, full loads are dumped.

The Gafill Oil Co. at South Bend, Ind., has a delivery method linked with a checker system for dealers, and a daily sales record for lessee-operated stations.

Dealers may be served by the checker method, or they may elect to telephone their orders. The checker visits dealer stations twice a week, taking inventory, and collecting for products sold from the consignment stock. A report from the checker is sent to the bulk plant, so the plant manager has notice of the dealer's inventory and schedules a delivery accordingly.

The dealer station checker out of the South Bend bulk plant is also the company's collector. A beat among dealer outlets has been laid out so all such stations are visited twice a week. The Gafill company also operates in southwestern Michigan, with headquarters in Benton Harbor, and in this territory the dealer checker method is also used.

For lessee station operators the company has a combination consignment and bookkeeping system, leading up to the lessee buying his own inventory. When a lessee takes over a station, for example, the outlet is completely stocked. The lessee sends a daily sales report to the company's office, with the cash and sales on credit approved by the company, with the inventory readings.

The bookkeeper in the office charges in products at the tankwagon price. Against this debit are matched the lessee's credits represented by sales in the daily report. Twice a month a statement is issued to the lessee on the status of his account and the credit balance is available to the lessee.

The lessee purchases his inventory through allowing part of the credit balance to accumulate on the books of the company, instead of withdrawing the full amount of the credit balance each period.

The lessee's report is sent to the bulk plant early in the afternoon and notifies the plant of the station's inventory. The reports from the dealer station checker also are at the bulk plant, so the manager has full information on the status of the inventory at all outlets, and schedules truck deliveries accordingly.

The company does not endeavor to maintain a standard inventory at each lessee or dealer station, through regular deliveries. Instead, trucks are dispatched to specific stations with loads

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Systematic Truck Washing Cuts Painting Cost in Half

One oil company, after making a study on its fleet of 15 trucks of various sizes and uses, found that by systematically scheduling its truck washing program, the painting of the trucks could be extended to a two-year period instead of one year, and also that the washing cost would be lower.

Under its old schedule, this company's annual fixed charges for the washing operation on the 15 trucks was $1066. Under its new cleaning and washing schedule, the total cost, including fixed charges and cost of the cleaner, is $1075 for the same units.

Under the new schedule, the cleaning operation is divided into three types of operations; (1) washing, (2) dry wiping, and (3) hosing. Washing of each unit, including the understructure, is scheduled for once every two weeks, and represents annual fixed charges of $533 for the 15 pieces of equipment used in the study.

Each unit is "dry wiped" twice a week, at an annual fixed charge cost of $217, and the third operation, "hosing," is done on all trucks after every severe storm, or on the skirting after a sloppy day. This latter operation was "recapped" at $225, representing the annual controlled charges on the "hosings" in making up the total of the annual cleaning cost of the 15 trucks.

The wiping operation is done every week, regardless of the weeks when the trucks are washed.

Cleaning instructions for the trucks follow a definitely planned pattern.

In the "dry wiping" operation, the use of a large soft dry cloth is specified. All painted surfaces of the truck are wiped, starting with the top and working down, until all loose dirt or film is removed. The employe doing the wiping is cautioned against rubbing too hard, and is urged to shake the dirt from the cloth from time to time to avoid abrasion.

In the "hosing" operation, the entire understructure is first washed with hose pressure. Then, with reduced pressure, the entire truck is hosed, starting from the top down. If necessary to remove road dirt, a sponge is used. The surfaces are then dry-wiped, and the windows dried.

In performing the complete wash job, the engine is first protected and care is taken not to squirt water through the radiator or louvres. The cleaner used in the truck washing operation consists of a mixture of a practically neutral cleaning agent, a very mild abrasive, and a wax content.

IN WASHING the understructure, the cleaner is first stirred thoroughly in the drum, and one pint then drawn off into a pail. To this are added one pint of kerosine and four pints of water, all of which are then mixed well. All parts of the understructure are then washed with a brush. The loosened dirt is then hosed off with water pressure.

In washing the painted surfaces, such as the cab and tank, the cleaner is again used, and after being stirred thoroughly, one quart is drawn off into a clean pail. Four quarts of water are added, and the mixture is stirred well all during the washing operation.

After washing the understructure, the next operation is the cleaning of the inside of the cab.

The entire truck is then hosed with water. A soft cloth or sponge is dipped into the cleaner solution and wrung out slightly, and the entire truck washed with it by rubbing. A hosing then removes the surplus cleaning fluid, and the surfaces are dry-wiped until the wax is brought to the surface.

The final steps in the washing operation include cleaning all glass and drying it with a chamois, and rubbing all chromium-plated surfaces with a dry cloth.

on order of the plant manager, who has determined deliveries based on his knowledge as to the rate of sales plus any other factors such as holidays and week-ends.

The placing of deliveries on an established route basis is a method used by some jobbers. Routes are arranged so that a truck stops at a station usually twice or three times each week. The dealer or lessee purchases sufficient gasoline to run the station until the next delivery date.

A combination route and order delivery system is operated by the Abshire Oil Co., at Goshen, Ind. The company operates four bulk plants in north-central Indiana, and about 65 per cent of deliveries are on routes, 35 per cent on orders.

Where deliveries are on orders, the company seeks co-operation to have the orders come in for full loads. Some retailers who buy in compartments, co-operate through calling other retailers in their vicinity and combining the orders. Thus, with two dealers in one town and one dealer wanting a delivery, this dealer will seek the order of the other dealer. One order for two dumps will be telephoned the bulk plant, so a truck can serve both outlets on one trip.

IN OTHER cases the bulk plant manager attempts to build up a compartment order to a full load. Other retailers in the neighborhood of the retailer placing the order are telephoned to see if they cannot handle the remainder of a full load.

The Continental Service Co., at South Bend, Ind., has its four leased stations, and 62 dealer outlets on routes, with the truck stopping two or three times each week.

Prior to a truck starting to cover a route the plant manager calls all retailers on that route soliciting orders. The telephoning is done from the bulk plant in the late afternoons for orders to be delivered the following day.

The company does make "emergency" deliveries, but an emergency is defined as the case of a station running out of gasoline when the tanks were filled on the last regular delivery. Where only a small quantity was purchased on the regular delivery, and then tanks run dry, this is not considered an "emergency."

When the change over to routes was made there was some grumbling among retailers, it was reported, and some remarks made about lack of "service." "Service" in the opinion of C. F. Richardson, the oil company manager, is not hauling 50 or 60 gallons of gasoline to a dealer at a loss but "service" is in keeping a dealer supplied who regularly keeps storage filled but through an extra heavy sales period may run out of gasoline.

The Continental organization operates five trucks, two in bulk plants outside of South Bend, and three from the South Bend plant. Two trucks now are equipped with meters, another is to be equipped with a meter next year.

In the middle west there seems to be a trend toward the use of meters on trucks engaged in gasoline deliveries. Oil companies have already adopted the practice of using meters on trucks engaged in fuel oil and heating oil deliveries. At the start of the use of meters in this connection, some companies thought the dealer might be encouraged to take smaller deliveries than when he was buying by the compartment or even full truck load. In actual experience, dumps are found to average as large, if not larger, than before meters were used in this service, it is said.

In general, some marketing companies say the shift in service station operation from company management to lessee operations has caused a slight decline in the average amount of gasoline delivered, but that this has not been enough to cause any noticeable increase in delivery costs.

Traveling 'Merchandisers' Promote Sales in Southeast

Photos by Freuhauf Trailer Co.

MOBILE sales promotion facilities are being taken to service stations and garages of the southeast by a team of "Merchandiser" trailers recently outfitted by Standard Oil Co. of Kentucky.

The Merchandisers are fitted with complete displays of products merchandised by the company—including greasing equipment, tires, batteries, lamps and miscellaneous accessories.

Because of the high degree of specialization being developed in the lubrication department of automobile-servicing, one of the primary purposes of the Merchandisers will be the education of filling station and garage operators in various uses for present-day oils and greases, the company says.

A trained engineer is in charge of each unit and at each stop he supervises a movie, set up and shown inside the trailer, giving dealers up-to-date information on effective lubrication, as well as discussing other Standard-merchandised products.

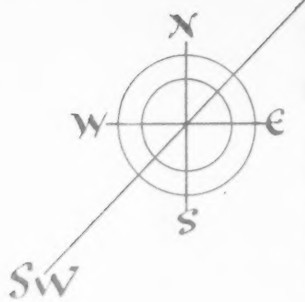
The idea is an attempt to make it easier for sales organizations in the field, and is a part of the general trend toward more personal demonstrations.

The mobile demonstration facilities are provided on what the company believes is a paying basis, because of the economy of operation of the tractor-trailer unit, its flexibility, its adaptability for freight-hauling purposes as well as for display purposes, and its advertising value—it is painted in Standard Colors and with company advertising.

NORTH • EAST • SOUTH • WEST

SOUTHWEST PUMPS

ARE PERMANENT, PROFITABLE INVESTMENTS



The *NEW SOUTHWEST 90's* Are Even Greater Pumps ... of Even Greater Value

Southwest Pump Company designed the first modernistic pump in 1934 . . . and each year has introduced new and exclusive features not found in other pumps. When you talk to station operators who have tried Southwest Pumps you readily learn why Southwest Pumps are winning top rank in the minds of successful operators from coast to coast—from Canada to the Gulf. Dispensing all kinds of gasoline—in all kinds of weather—Southwest Pumps have proved their mechanical perfection by continued accuracy and trouble-free operation.

The new Southwest Series 90 are even greater pumps, combining needle-point accuracy, long life of trouble-free operation, low upkeep, dispensing-speed control and dynamic enduring beauty.

To attract more customers . . . to revitalize your sales and step up your profits . . . install the truly *modern* Southwest Series 90's. Write for complete information today. SOUTHWEST PUMP COMPANY, BONHAM, TEXAS.

OUTSTANDING EXCLUSIVE FEATURES OF THE NEW 90 SERIES

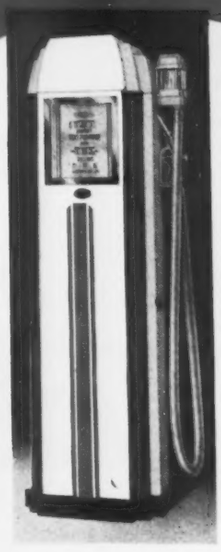
1. Large visigauges built into dials.
2. Visigauges will not empty due to heat expansion.
3. Gasoline will not run out of air eliminator vent due to heat expansion.
4. Vapor-pressure relief valve entirely eliminates air or vapor that is trapped in top of pump.
5. Dual air eliminator. Two separate air eliminators built into one housing. Perfect in operation and trouble-free.
6. No vapor lock in S/W piston type meter.
7. No vapor lock in S/W rotary pumping unit.
8. Positive interlock. Actuated by cams.
9. Full length hinged cabinet doors. Individual locks.
10. Individual lock on totalizers.

Every one of the above features is desirable, some of them are absolutely necessary if you are to have safe and satisfactory operation of your service station gasoline pumps. Only Southwest has them all.

THEY STOP FOR SERVICE WHERE THEY

MODERNIZE FOR

SOUTHWEST CREATED THE FIRST MODERNISTIC PUMP IN 1934!



Shown here is the first modernistic pump which Southwest introduced in 1934. This was the original *modernistic pump!*

THE NEW 90 SERIES
(AT THE LEFT)

Southwest's latest model is basically the same exterior design as the original 1934 model. It has not been necessary for Southwest to make any material change in a design that is *architecturally correct . . .* with *beauty that endures!*

PUMP CO.

DESIGNERS SINCE 1916

TEXAS

SEE MODERN EQUIPMENT . . .

MORE PROFITS!

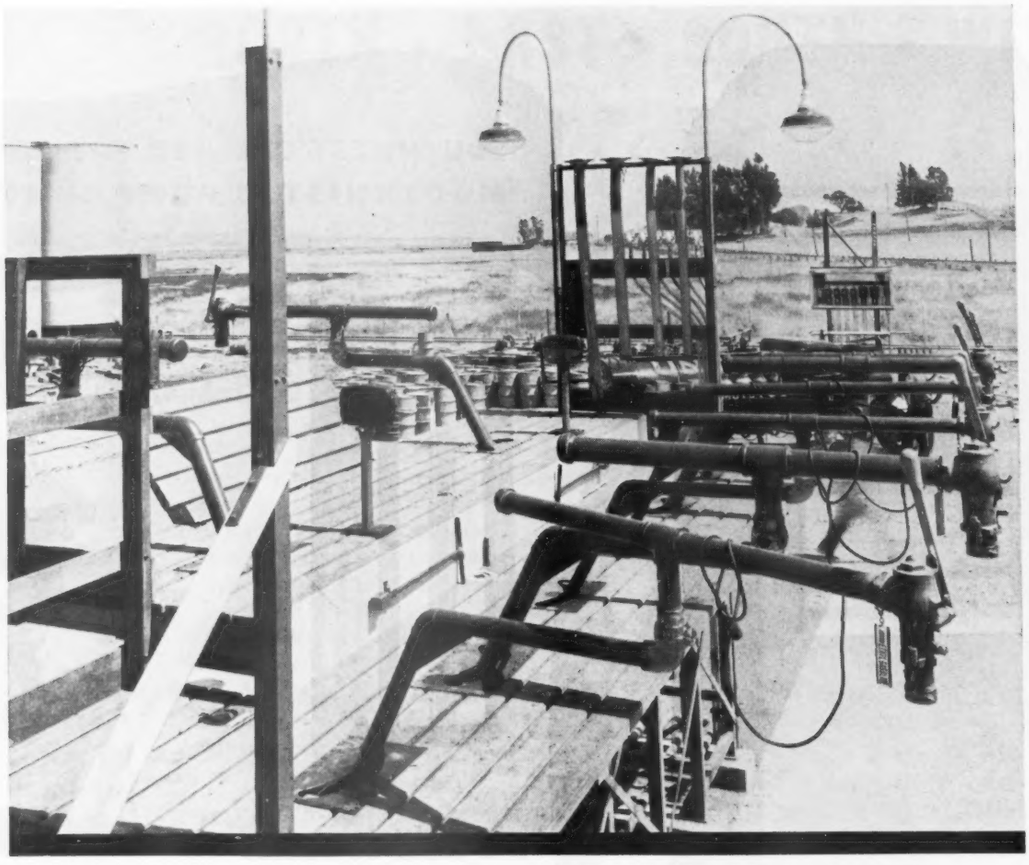
MAIL TODAY

SOUTHWEST PUMP COMPANY, BONHAM, TEXAS. Please tell me more about how Southwest 90's can increase my profits.

*Name*_____

*Address*_____

*City*_____ *State*_____



Two elevations on this rack built by Union Oil Co. at Petaluma, Calif., facilitate loading of both transport and distribution tank trucks. Design features swing joints in loading arms, submerged loading, and extension of meter dials to the upper deck

Transport And Delivery Truck Loading At One Rack

IMPORTANT in connection with the greatly increased movement of oil products by water along the Pacific Coast, and its redistribution by oil companies to centers of consumption, is the design by their engineers of handling facilities to meet the new operating conditions involved.

This is illustrated by a new bulk station recently completed by Union Oil Co. at Petaluma, a short barge haul across San Pablo Bay (north extension of San Francisco Bay) from its Oleum refinery, but a long truck haul by highway. This company is also building a bulk distributing depot on the coast near Monterey, about 200 miles southwest of Oleum but available to supplies from tankers operating between Los Angeles and San Francisco.

In addition to providing distributing facilities for the immediate marketing territory, Petaluma and Monterey (actually located at Seaside) will serve as supply depots for transport trucks operating to points previously supplied by rail and truck direct from the refinery. These transports will operate up to a distance of about 150 miles north and west of Petaluma and about the same distance south and east of Monterey.

Existing rail and truck rates from Oleum to Petaluma are 10.5 cents per 100 pounds, or .00693 cents per gallon, and to Monterey 20 cents per hundredweight, or .0131 cents per gallon. Actually the land rate in this direction is slightly less because Seaside is a few miles nearer the refinery than Monterey.

Storage at Petaluma consists of one 5000-barrel tank for regular gasoline, one 1340-barrel unit for third-grade, and five 20,000-gallon tanks for stove oil, kerosine, diesel oil and ethyl. The three grades of gasoline are supplied by barge, with the other products and cased goods moving by truck. Provision has been made for future expansion of the plant and the layout is designed for addition of a spur rail track and loading rack at a later date.

Making its initial bow at Petaluma is a new type truck loading rack, developed by Union engineers for use

at bulk stations where both retail and wholesale delivery equipment is to be loaded and where operations do not warrant separate racks for the two types of equipment.

With an eye to efficient and safe operation, this rack consolidates an arrangement of facilities scheduled to give faster loading of all types of tank trucks and to minimize accident hazards by eliminating wasteful and unnecessary motions by the operator.

An outstanding feature of the rack in this respect is the location on the main loading platform of everything pertaining to the operating procedure. Valve and pump controls, meter dials, and other essential equipment are on this deck, easily available to the operator.

The rack, which is of all steel construction on concrete piers, except for the 2 by 6 planking used on the stairs and platforms, permits loading from two sides. A dual purpose effect is achieved by means of two elevations in the deck. One, eight feet above grade, is for servicing transport equipment, and the other, a foot lower, permits easy access to the top of distributing truck tanks.

Overall length of the deck is 20 feet and the 8-foot width is divided to give 4 feet at each elevation. Because of the variation in height of the transport truck tanks, a hinged extension of the main deck is provided along part of the transport loading side. This addition is two and a half feet wide and four feet along the hinged side.

In operation, this section is in a sharply inclined position while the truck is coming in under the fill spouts, and is held there by counterbalancing on the underside. The operator's weight then forces the section down until it rests on the tank top. It is prevented from rising by a latch which locks in any one of several positions between horizontal and sharply inclined. A release on this latch is operated from the loading platform by a control placed alongside the riser between the two elevations.

There are eight fill pipes on this rack — two on the transport side and six for the loading of smaller equipment, on the other side. The transport movement is confined to regular and third-grade gasolines. Faster loading of these two products on both sides is accomplished by use of 3-inch lines from storage to the fill spouts. Three-inch centrifugal pumps, driven by five-horsepower motors, give a discharge rate of 250 gallons a minute, through 3-inch meters.

The other products are delivered at a rate of 100 gallons per minute through two-inch lines, using three-horsepower motors and two-inch centrifugal pumps. The pumping equipment is connected by remote control to the loading platform.

In the light of successful experience, this rack utilizes swing joints to give flexibility in maneuvering the fill spouts over the tank openings. Each loading arm has two of these joints, one on the riser about five feet above grade and a second at the end of a horizontal extension to this riser. Accompanying photographs will serve to illustrate this arrangement.

About a foot above the lower joint, each riser angles out to come up through the platform flooring about two feet from the outer edge. A steel sheet with a curved opening serves as a guide for each line and as a protection against accident.

Above the second swing joint, a short vertical pipe connects with another horizontal arm, which is equipped with a slow-closing loading valve. The section of this arm in back of the upright connection is filled with lead to counterbalance weight of the fill pipe and a submerged loading extension. The loading arms have no vertical motion, only horizontal.

Need for up and down movement of the arm is eliminated by use of flexible, submerged loading tubes connected to the fill spout during loading. These are in four and five foot lengths — to accommodate the various tanks — and in two and three-inch diameters. In practice they reach to within two to eight inches of the tank bottoms. When not in use, the tubes are carried on a rack at one end of the platform.

In metered loading of the regular and third-grade gasoline, one 3-inch meter serves for both transport and distribution truck flow lines on each product. This is accomplished by a welded "Y" piping connection on the discharge side of each of the two meters.

Among the features of this rack is the extension of the meter dial about a foot and a half above the higher loading deck, so that the operator can easily read it while loading.

Provision has been made on the platform for closing main valves on each of the six flow lines by means of extension rods from the valves under the rack. The upper ends of these rods are flush with the platform floor and are operated by a socket wrench provided for the purpose and located in a rack on the elevation riser.

Flanking each side of the rack is a level concrete loading slab, 42 feet long and 12 feet wide.

At Monterey, where a similar rack will be constructed, the primary consideration was on provisions for unloading the refined products from tankers into shore storage. The expense and maintenance of a long dock in the exposed shallow water was not feasible and there was the added difficulty in bringing a large tanker in close to shore for even a long dock.

These factors prompted the selection of a submarine pipeline for the unloading operations. This line, which was laid in October, consists of 2200 feet of 8-inch, 28.8-pound, seamless pipe in 40-foot lengths welded together. Another 1900 feet of 8-inch pipe connects the shore end of this line with the storage.

Union's line was laid parallel to a 16-inch submarine line operated by the Associated Division of Tide Water Oil Co. at Monterey in loading tankers with crude oil from San Joaquin Valley fields, and will use the same mooring buoys. Associated also has an 8-inch refined oil submarine line at this point.

At the deep water end of the new submerged line, 150 feet of smooth-bore submarine hose, having a gasoline-resistant inner liner, provides the flexible connection with the supply ship. When not in use the hose lines on the ocean floor in about 60 feet of water. The free end, which is closed by a blind flange, is fastened to a mooring buoy with a cable used in hauling the hose aboard ship.

Following the unloading operation, the line is cleaned and filled with water. When a new supply of products is unloaded, the water is forced out into a tank where it is drained off. Pumps on the ship will discharge through this line at a rate of about 3000 barrels per hour.

Special precautions were taken in protecting the submerged line against corrosive action of water and sand. Two layers of pipeline felt were wrapped into two applications of hot asphalt and the final covering was a canvas wrapping to protect against damage when the line was pulled into the water.

Company engineers are also contemplating provisions for protecting the line against electrolytic action. In this connection, two insulated flanges

From its Oleum refinery across San Pablo Bay, Union Oil Co. barges three grades of gasoline to these discharging facilities at Petaluma

PRESENTING

SHOCK-PROOF

A COMPLETE SOLUTION TO THE PROBLEM

Easy Opening—shock-proof closing—due to patented features of design. No shock or hammer — no damage to equipment.

AT LAST there is a practical answer to the most serious problem encountered when fuel oil is delivered under pressure from truck tanks. Following rigid tests, McDonald engineers present a SHOCK-PROOF nozzle which closes with a *cushion* effect and thus *eliminates* the shock and hammer usually experienced, with its resultant damage to equipment.

Controlled Delivery —Delivery to the smallest fraction without chatter.

Full Volume of Flow—an important feature, given special attention during designing process.

McDONALD *Ful-Flo*

FEATURING MAXIMUM VOLUME OF FLOW NOW

• **McDonald Ful-Flo Nozzles have been designed to give the maximum volume of flow, and have been so proved under actual working conditions.**

Available in aluminum (Plate 959) as well as bronze (Plate 942); also in a new all-bronze 1" size (Plate 961).

Aside from the shock-proof feature, these nozzles are identical in construction to the Plates 942-S and 959-S above described—and are

A. Y. McDONALD MFG. CO.

McDONALD
FUEL OIL DELIVERY NOZZLES
OF PRESSURE SHOCK AND HAMMER

The cushion-closing principle is performance-tested and positive—the result of experience gained in designing the highly successful McDonald Plates 945 and 956 Loading Line Valves.

Plates 942-S (Bronze) and 959-S (Aluminum) are proudly offered as a positive means to *better* performance, *longer* equipment life and *reduced* upkeep costs. A trial will convince you.

Adjustable Pressure—changed, when necessary, by the turn of a screw.

Check-Valve—furnished when desired. Outlet type eliminates leakage on driveways should lever be accidentally opened when reeling.

Aluminum or Bronze—same price. Aluminum (959-S) weighs about half of Bronze Type (Plate 942-S)

HOSE NOZZLES
AVAILABLE IN ALUMINUM AS WELL AS BRONZE

GUARANTEED to render highly satisfactory service wherever a shock-proof nozzle is not required.

If fast, efficient delivery is a factor in your business, a trial will convince you that these are the nozzles you've been looking for.

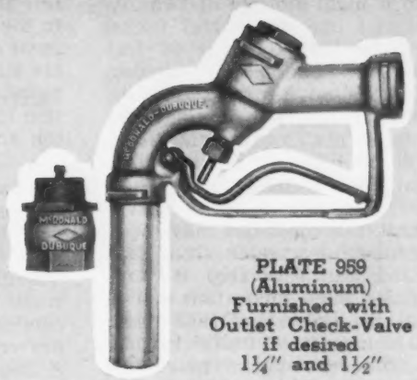
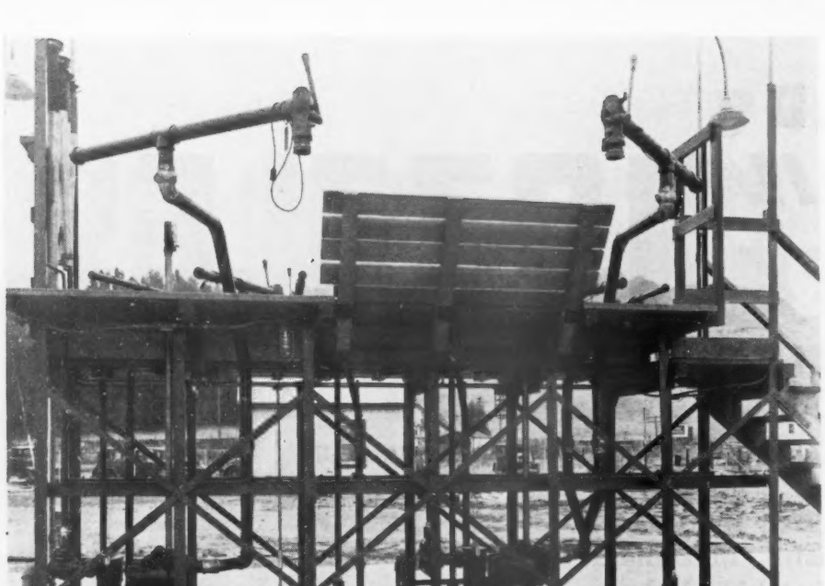


PLATE 959
(Aluminum)
Furnished with Outlet Check-Valve if desired
1¼" and 1½"

PLATE 961
1"—All Bronze—the result of a definite demand. Almost unbelievable volume of flow—furnished with Inlet Check-Valve if desired

DUBUQUE, IOWA



Measurement of regular and third-grade gasoline into trucks at this Union Oil Co. loading rack is through 3-inch meters, with a "Y" manifolding on the discharge side for flow lines to each side of rack. The hinged tilting platform is a safety provision for ease in getting from the platform to the transport truck tanks

on the shore end of the line prevent transmission of current along it to the storage tanks.

A telephone cable fastened to the line and hose provides direct connection between the tankship and shore storage during unloading.

SUPPLIES pumped from the tanker will go to a main storage of two 10,000-barrel and one 5000-barrel tanks, which will be located about 60 feet above the sales station and shipping plant. This will give gravity feed to the combination-type distributing rack and to tank car loading facilities, which will be built at a later date. This plant is scheduled to be completed early in 1939.

In general, the coastwise movement of oil products by water from Los Angeles and San Francisco Bay refining centers is no innovation and it should not be understood that there is any sudden shift of traffic in that direction. The development now indicated is to extend barge and tanker operations along available waterways to points previously served by truck and rail carriers from central supply depots.

By far the most important water movement of refined petroleum products along the west coast is north from Los Angeles and San Francisco to the growing consuming areas of the Pacific Northwest, British Columbia and Alaska.

With the exception of relatively small shipments into eastern Oregon and Washington from Rocky Mountain refineries, and the comparatively nominal manufacture of supplies in Canada, the petroleum requirements of these states come from California and, for the most part, move by water in large tanker loads to storage at Portland, Seattle, and Vancouver, B. C.

From these secondary supply points, distribution has been effected by truck, and rail to inland areas, and by barge to communities along the waterways, where further distribution is made by rail and truck. An example of growth in the latter movement is the development of barge deliveries up the Columbia River a distance of more than 200 miles above Portland, for redistribution into eastern Oregon and Washington and into western Idaho.

A combination through rate, utilizing barge and truck, has been recently proposed by truck lines operating into this Inland Empire. The plan is to ship by barge to large storage at Umatilla, Ore., for redistribution by truck to inland consuming areas. The combination rate would be about 20 per cent less than the through truck or rail rate from Portland to the same points.

At present this operation would use vessels and trucks operated by common or contract carriers, but the possibility is that marketing companies may elect to operate their own motor vessels and construct individual storage at important distributing points along the river.

Several companies marketing in the northwest territory have built facilities to permit bulk unloading of California supply tankers at strategic, deep water points on Puget Sound, the Columbia River, or along the ocean coast, at other points than Portland, Seattle, or Vancouver, thereby eliminating the cost of double handling.

One company, recently announcing the expenditure of more than $500,000 for new storage tank construction in this area, in addition to enlarging tankage at Portland and Seattle, is increasing storage capacity at Astoria, at the mouth of the Columbia River, and at Tacoma, on Puget Sound, to accommodate larger direct deliveries by tankers on the regular northern run.

Another aspect of the west coast water transportation picture is the movement north from Los Angeles to San Francisco Bay, by companies not operating refineries or not manufacturing all their requirements in that area. Delivered to large storage depots, or from refining centers on the Bay, the products are distributed by rail, truck and barge.

Barge movement up the Sacramento and San Joaquin rivers, and to points on the Bay, has received increasing consideration by oil marketing companies since the increase in rail and truck tariffs a year ago.

This is particularly true of Sacramento, approximately 100 miles north and east of San Francisco Bay supply points. In addition to being the center of an important consuming area, this city, by reason of its water route, is the starting point for rail and transport truck movement into eastern California, and Nevada and Utah.

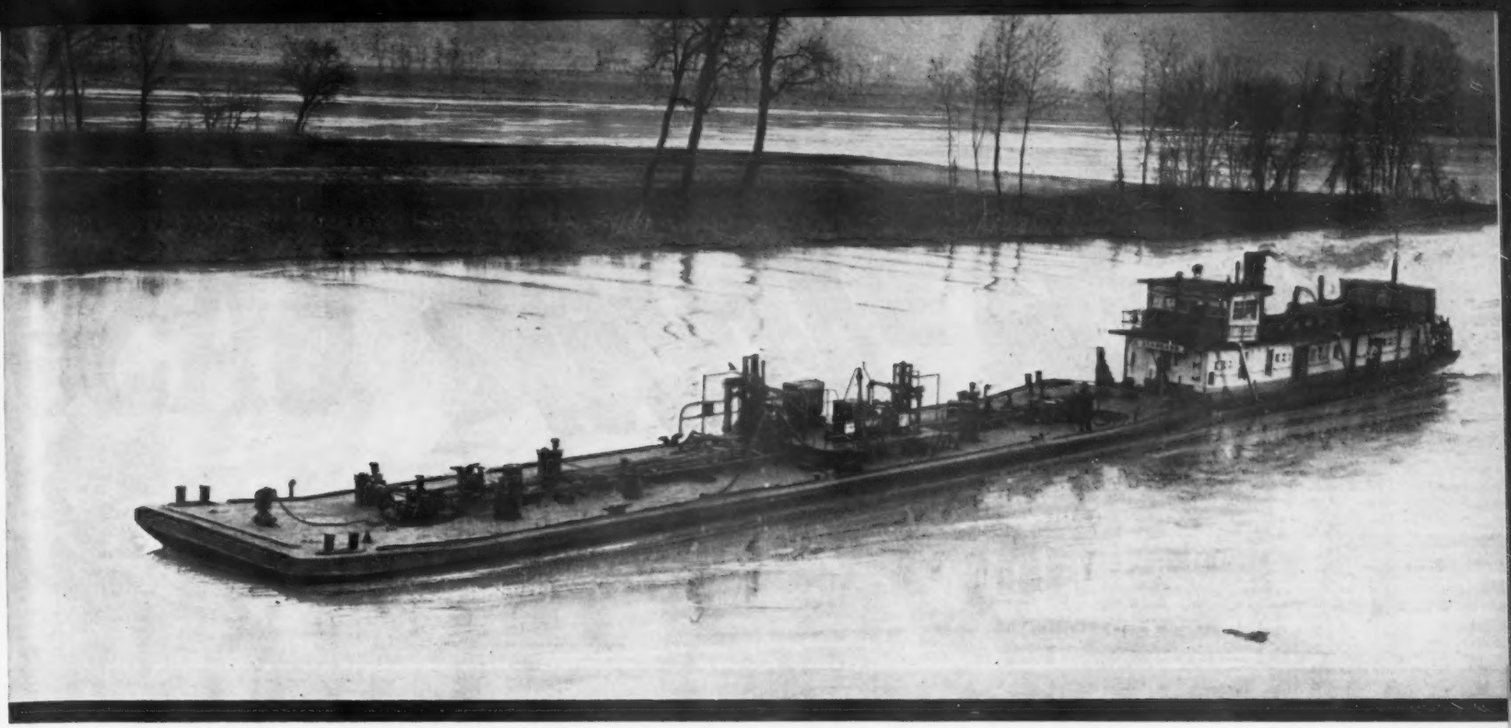
THE land rate by rail and truck to Sacramento from the Bay area is 13 cents per 100 pounds, or .00858 cents per gallon. The oil companies, using their own barges or river boats, in most instances, have effected appreciable savings on this haul.

Similar economies have resulted from the use of barges for making the short water haul from supply points on the east-bay mainland to the west-bay peninsulas, thereby obviating the long land haul north and south around the Bay.

Another phase of water transportation on the Pacific Coast, and one destined to receive further consideration in the future, according to competent observers, is the unloading of part cargoes at coast points by tankers operating between Los Angeles and San Francisco, or between California and the northwest.

For years, California oil companies have loaded crude oil, pipelined to seaboard from inland producing areas, into tankers anchored offshore in deep water. Submarine pipelines, with a flexible connection on the discharge end, long piers, or a hose floated on the water from the end of a pier, have made this operation feasible and economical.

There has been some success in the use of similar facilities for unloading refined products from tankers to shore positions for re-distribution to inland communities, as described earlier in this article in connection with the Union Oil Co.'s new terminal at Monterey.



This stern paddle-wheeled steam towboat Standard and modern steel oil barge supplies numerous Ohio river bulk plants for Standard of Ohio

Oil Movement Expanding On Inland Waterways

By M. G. Van Voorhis

N. P. N. Staff Writer

THE inland water movement of gasoline and other refined products in the U. S. has continued through 1938, to extend into new areas and to increase in volume on the Great Lakes and the Mississippi and Ohio river system.

Only since last May has there been barging of petroleum products on the Tennessee river, yet one company now has four water terminals on this stream, three of which are in northern Alabama as far as 350 miles above the mouth at Paducah on the Ohio river.

An annual traffic of 3,500,000 barrels of petroleum products on this river is predicted by the head of the federal project, the Tennessee Valley Authority. A similar growth of petroleum traffic took place on the Cumberland river largely in 1936 through the territory to the east and north of the Tennessee river.

The outstanding development of 1937 in the movement by water of oil products and continuing into 1938 is on the upper Mississippi river and particularly the Twin Cities, where three river terminals this year will receive close to 50,000,000 gallons of gasoline, it is estimated, and half as much in fuel oils. Other river terminals have been built in Iowa, notably at Bettendorf. These new terminals will go a long way toward making available petroleum supplies by water to 70 per cent of the population in Standard of Indiana territory which, it has been shown by S. A. Swensrud, of the Standard Oil Co. of Ohio, live within 50 miles of navigable waterways.

On the Great Lakes, port receipts of petroleum products in 1937 were 28 per cent ahead of 1936. Three of the larger ports helped to produce this gain by increased receipts of over 1,000,000 barrels each. A few new terminals were built and two more ports were added to those receiving petroleum products in 1937. While the indications of petroleum movements on the lakes in 1938 are said to be for little change from 1937, river movements, particularly from the Mississippi into the Ohio river, show such gain that a lack of transportation equipment was reported.

An accompanying table shows the gains made on the Ohio river in the past 10 years. Examination of the tabulated gasoline movement on the Mississippi river in the two districts on either side of the Ohio river, indicates that the principal gains in Ohio river traffic have come from the St. Louis area, where refineries of the Standard Oil Co. of Indiana, Shell Petroleum Corp. and Socony Vacuum Oil Co. are located and where Phillips Petroleum Co. has a pipeline terminal. The latter three companies have been particularly active in extending their river operations in the last few years.

The Cumberland river has already been mentioned as a large carrier of petroleum products. In 1937 a total of 2,070,000 barrels of gasoline moved up this river and probably this figure will not be exceeded in 1938. However, a considerable gain may be expected on the Tennessee river, which flows through a territory south of the Cumberland in Tennessee and northern

SEE IT! At The National Moto

Twin-Tank GASOI

Greater Safety thru

Compared to a conventional oval tank of the same height and width:

1st. **Twin-Tank strength as a beam gives a 20 to 1 factor of safety.**

2nd. **Twin-Tank bottom strength or strength over the frame (most vital section of any tank) is 8 times greater.**

3rd. **Twin-Tank hopper or liquid carrying strength is 3¼ times greater.**

4th. **Twin-Tank vertical shear strength is twice greater.**

5th. **The short radii of Twin-Tank shape virtually eliminates vibration and reduces the possibility of cracking.**

6th. **Spillage on Twin-Tanks is drained out of the depressed walkway at rear. This reduces fire-hazard; protects tank finish.**

7th. **Twin-Tank capacity is ½ gal. per inch of length greater.**

PATENTED AND PATENTS PENDING

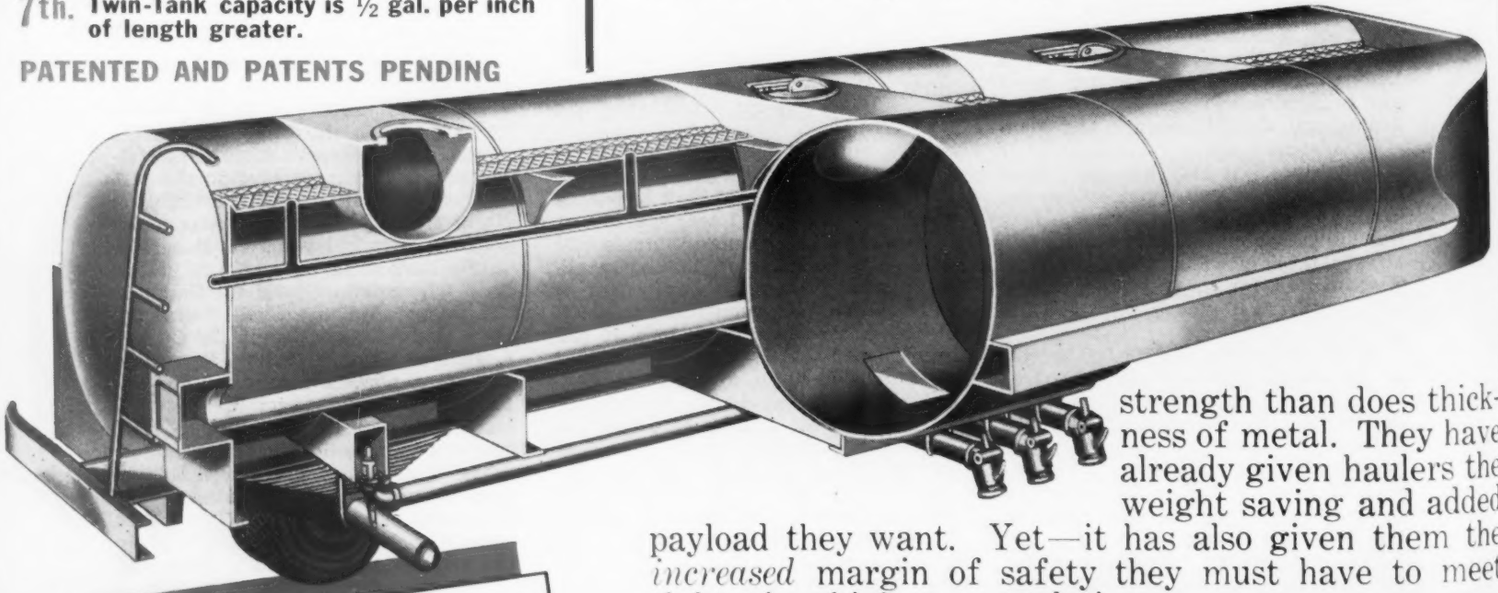
Lower Deadload! Maximum Payload! More Than Meets Tightening Safety Regulations

Like every really great advancement, this new Butler Twin-Tank design is simplicity itself. You have only to see it to know why it is so much stronger and safer.

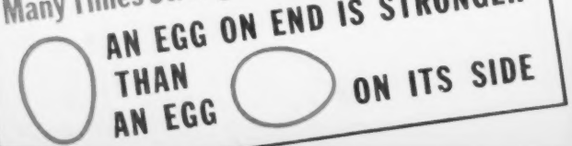
Each "twin" is a stronger shape and stands the strong way. The two are tied together for maximum strength and best load distribution.

This design is new, but not untested. Instead, it is an adaptation of the Butler design that has hauled millions of gallons of highly volatile casinghead gasoline and butane. These Butler tanks have gone hundreds of thousands of miles, carrying loads under pressure in perfect safety. They have already proved that this design actually contributes more to tank strength than does thickness of metal. They have already given haulers the weight saving and added payload they want. Yet—it has also given them the *increased* margin of safety they must have to meet tightening highway regulations.

See Twin-Tanks at the Show and decide for yourself.



Many Times Stronger For the Same Reason:



BUTLER MANUFA U

ruck Show, November 11, 12, 13, 14, 15, 16, 17.

NE TRANSPORT Gives GREATER STRENGTH

Haulers Everywhere Ordering! To Get Extra Strength, Capacity, Safety of Butler Twin-Tanks

An egg out of your kitchen can prove Butler Twin-Tanks have the extra strength you want! You know it's easy to crush an egg lying on its side. But it takes real strength to crush the egg with pressure on both ends. Decide for yourself if two ovals on end won't be far stronger than one oval on its side!

Butler Twin-Tank design gives extra safety, too! The short radii of twin tanks cut down vibration. *The runway between Twin-Tanks permits draining of spillage to the back of the tank away from the exhaust, cutting fire hazard and preserving tank finish.*

And finally, Twin-Tank design actually means *more* capacity —½ gallon more, per inch of tank length, than conventional single oval design of the same height and breadth.

No wonder Butler sales are skyrocketing. Single orders quickly lead to fleet orders. If you haul fluids, see Twin-Tanks at the show; you'll want to place your order, too. (Note: If you can't make the show, write us and we'll send you complete engineering figures.)

BUTLER
TWIN-TANK
Safety
TRANSPORT

Delivers Complete With Timken Rear Axle Assembly, Power Brakes, 5th Wheel

Butler Twin-Tank Transports are engineered to give you the utmost strength as a hauling unit. Everything from the axles to the piping between the tanks is calculated to insure that no single part is subjected to excessive stress. Here is a complete liquid-cargo hauler.

A URING COMPANY • KANSAS CITY, MISSOURI
MINNEAPOLIS, MINNESOTA

Alabama. The Tennessee enters the Ohio at Paducah, only a short distance below the Cumberland on the Ohio.

Gulf Refining Co. has already constructed three river terminals in the northern Alabama section of the river at Sheffield, Decatur, and Guntersville and one at Perryville, Tenn., 135 miles above Paducah. The first shipment of gasoline into the Tennessee valley section of the south was made last May with a cargo of over 1,000,000 gallons, according to a quotation from the Florence (Ala.) Times News, introduced in an Interstate Commerce Commission report on an application for lower rail rates on petroleum products to these points.

To reach these three terminals river tows must be locked through the "highest single lift inland waterways lock in the world" at Pickwick Landing dam, on the southern border of Tennessee. The lift is 61 feet. To reach Decatur the barges climb 89 feet in two steps over Wilson dam at Muscle Shoals and then 50 feet over Wheeler dam 15 miles farther upstream. Guntersville, 358 miles from the mouth of the Tennessee river, is nine miles above Guntersville dam, to be completed in 1940 with a 39-foot lift. Guntersville is 250 feet above the mouth of the Tennessee river.

Shipments of Petroleum Products on the Great Lakes in 1937

(Figures in Barrels)

Ports	1937	1936	1935
Indiana Harbor	12,460,000	13,903,000	15,084,000
Toledo	4,223,600	2,626,400	2,650,900
Cleveland	954,500	984,200	892,900
Buffalo and Tonawanda	183,400	191,100	407,000

Receipts of Refined Petroleum Products on the Great Lakes By Ports, 1935-37

(Figures in Barrels)

	Receipts		
Ports	1937	1936	1935
Superior, Wis.	4,017,000	2,918,700	2,751,600
Green Bay, Wis.	1,914,000	1,143,300	1,125,500
Milwaukee	281,600	238,300	.....
St. Joseph, Mich.	756,400	522,800	340,000
Muskegon, Mich.	2,540,000	1,925,800	1,930,000
Traverse City, Mich.	256,900	231,300	175,300
*Chicago	726,000	734,400	644,400
*Indiana Harbor	1,485,000	1,342,600	1,093,100
Saginaw River, Mich.	2,763,400	1,697,500	1,568,500
Cheboygan, Mich.	44,700	.....	.....
Port Huron, Mich.	171,000	135,800	77,500
Alpena, Mich.	48,300	.....	.....
Detroit	7,737,500	7,424,760	6,573,000
Toledo	1,082,500	990,000	192,400
Lorain, O.	158,500	185,610	192,000
Cleveland	4,012,000	2,760,500	2,491,400
Erie, Pa.	80,100	54,900	.....
†Buffalo and Tonawanda	3,328,700	3,529,900	2,343,600
Total Lakewise receipts	26,420,000	20,620,400	17,897,000
‡Total internal receipts	4,984,000	5,443,000	3,602,000

*Internal receipts through Chicago Ship and Sanitary Canal.
†Internal receipts through New York State Barge Canal total 2,773,000 barrels in 1937; 3,138,683 in 1936 and 1,864,156 in 1935.
‡Internal receipts through Chicago Ship and Sanitary Canal and New York State Barge Canal.

Principal inland waterways over which petroleum products reach consumers in the eastern half of the U. S. Tank trucks complete a large volume of shipments within 75 and 100 miles on either side of these rivers from river terminals and the same distance from lake ports, in some instances, such as in hauls from southeastern ports, trucks haul for longer distances up to 400 miles

The significance of this water movement is that it reaches down into the center of the southern states to feed a territory bordering other territories supplied by water movements from rivers flowing into the Gulf and Atlantic ocean and supplements Cumberland river traffic reaching as far as Carthage, Tenn., above Nashville, from whence some of this territory was formerly supplied by rail. Standard Oil Co. of Kentucky is also planning construction of terminals on this stretch of the Tennessee river involving handling five or six million gallons annually unless changes in rail rates make it inadvisable, according to the Interstate Commerce Commission report mentioned above.

THE outstanding development of the past two years in river transportation of petroleum products, however, is on the upper Mississippi. Three terminals in St. Paul and Minneapolis received by river barges, during the first eight month of this year, more than one-fifth as much gasoline as entered the Ohio river from the Mississippi river during the first six months of 1937 and three-fourths as much fuel oil as all that was barged on the Ohio during the entire year of 1937.

This total of 752,000 barrels of gasoline and 438,500 barrels of fuel oil for the early part of this year will increase to 1,200,000 barrels and 650,000 barrels respectively if the same rate of flow is continued during the rest of 1938. No decline was apparent on one day in October when 15 loaded barges were reportetd in the Twin Cities at one time.

The three companies responsible for these movements are Western Oil & Fuel Co., of Minneapolis, Socony-Vac-

uum Oil Co. (White Eagle division), and Shell Petroleum Corp. The first named company was organized in 1926 and was first to use the water facilities. The company is reported to have an annual throughput of 50,000,000 gallons of fuel oil and 14,000,000 gallons of gasoline sold under its own brand name. The company's terminal in Minneapolis near the head of navigation is said to have a capacity of 2,750,000 gallons.

Eleven miles below in St. Paul are the terminals of Socony-Vacuum and Shell. The Shell terminal with its 610,000 barrels capacity, is now the largest river terminal in the U. S. for shallow draft vessels, it is said, and possibly in the world. The Socony-Vacuum terminal is on adjoining property and has capacity for around 167,000 barrels.

Although the first widely publicized cargo of oil for the Socony-Vacuum terminal came from Kansas City over the Missouri river last year, no shipments this year have come down the Missouri, according to the district U. S. Engineer's office. The largest proportion of the barge movements to the Twin Cities originate at Wood River and East St. Louis, it is reported. This makes a 650-mile trip with an upstream rise of 270 feet through 24 or 25 locks and dams. The time for a round trip averages 15 days. Except for local deliveries, reshipment to bulk plants in Wisconsin, Minnesota, North and South Dakota, is largely a rail movement.

The Shell terminal, an air view of which is shown on the cover of this issue of N. P. N., is ideally situated on 32 acres of land on a shallow quarry floor through which a rail siding was already built. The bottoms of the tanks are 89 feet above the normal water level. Two separate 8-inch lines from the floating dock carry gasoline and fuel oil up to the storage tanks at the rate of 500 gallons per minute each. Two 80 h. p. gasoline engines supply the power. The pumping units are enclosed in two small houses on the floating dock. In addition to the marine terminal, an entirely separate bulk plant with smaller tanks is located on the property. A warehouse is yet to be built.

Socony-Vacuum's terminal features a 100-000-barrel Horton spheroid tank, which in addition to its vapor saving advantages has certain publicity and advertising value. The company dramatized its opening of the St. Paul terminal by its initial cargo coming down the Missouri form Kansas City and also by the use of the most modern towboats on which the "screw propeller and electro-hydraulic rudder control have replaced the paddle-wheels featured in the romantic history of inland rivers and the massive-spoked steering wheel in the pilot house." On top of the pilot's cabin is a life-size flaming red flying horse, the company's distinguishing emblem.

On portions of the Mississippi and Ohio rivers where petroleum traffic was already established, the most not-

Water Movement of Principal Petroleum Products and Crude Oil in the U. S.

(Figures include all coastal, Great Lakes, and inland river movements adjusted to eliminate duplications in receipts and shipments. Figures in other tables below are not adjusted for these duplications).

Total Domestic Water Movements of Principal Petroleum Products

*Thousands of Barrels**

Year	Gasoline	Fuel Oils	Kerosine	Crude Oil
1937	265,200	319,200	34,500	338,800
1936	231,500	251,300	28,900	295,200
1935	227,244	219,604	27,720	255,050
1934	224,959	217,619	27,764	270,400
1933	171,635	166,103	22,752	232,867
1928	102,127	131,615	6,182	149,671

Coastwise and Great Lakes Movements of Principal Products and Crude

*Thousands of Barrels**

Atlantic Coast Ports

Year	Gasoline	Fuel Oils	Kerosine	Crude Oil
1937	200,400	235,800	24,780	200,400
1936	202,900	244,100	29,870	157,500
1935	181,401	187,647	24,791	140,743
1934	171,465	164,318	22,077	154,239
1933	129,008	125,951	19,797	137,362

Gulf Coast Ports

1937	107,300	165,400	22,080	336,000
1936	111,200	122,400	18,120	254,200
1935	105,635	87,099	15,052	197,844
1934	108,983	88,306	16,896	237,862
1933	74,913	73,529	9,021	163,423

Pacific Coast Ports

1937	56,490	104,600	1,068	108,800
1936	50,500	85,950	1,053	77,500
1935	64,658	107,341	2,578	57,079
1934	64,053	102,928	3,265	53,154
1933	62,992	73,932	3,684	64,643

Great Lakes Ports

1937	43,780	18,570	1,645	4,480
1936	33,270	10,430	1,376	5,945
1935	33,782	7,644	1,254	8,383
1934	29,869	5,373	1,238	5,655
1933	21,862	4,456	827	19,343

River and Canal Movements of Principal Petroleum Products and Crude Oil

*Thousands of Barrels**

Atlantic Coast Rivers

Year	Gasoline	Fuel Oils	Kerosine	Crude Oil
1937	38,030	17,000	4,510	132
1936	34,440	19,240	3,760	5
1935	27,861	14,356	3,532	0
1934	23,344	7,089	2,895	500
1933	19,431	7,226	3,206	0

Gulf Coast Rivers

1937	2,233	731	100	22,570
1936	2,524	1,252	119	42,030
1935	1,134	783	68	22,118
1934	729	645	59	10,688
1933	1,929	2,033	143	33,337

Pacific Coast Rivers

1937	2,828	3,430	15	.....
1936	2,444	2,782	16	.....
1935	2,251	4,488	26	.....
1934	2,454	3,551	20	.....
1933	2,125	1,631	48	4

Mississippi River and Tributaries

1937	46,760	26,420	3,444	30,600
1936	41,650	28,930	305	30,160
1935	40,871	25,852	283	30,439
1934	29,529	15,030	736	20,381
1933	10,503	20,647	1,211	15,070

Canals and Connecting Channels (Federal, State, and Private)

1937	85,386	33,260	8,326	206,500
1936	34,905	25,900	5,392	161,108
1935	31,113	20,347	4,873	111,064
1934	31.386	17,587	4,827	115,341
1933	28,973	14,718	4,737	73,312

*Figures are derived from Annual Reports of U. S. Army Engineers giving tonnages of all products. The following multiplying factors have been used to reduce War Department Engineers' figures from tons to barrels: Gasoline, 7.7; kerosine, 7; crude oil, gas oil, and fuel oil, 6.7; lubricating oils, 6.3.

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Improved cooling obtained by new full-length air housing. Reversible . . . easily accomplished by merely shifting the brushes. • Furnished in four types . . . 1) Repulsion start induction, 2) Repulsion induction, 3) Direct current, and 4) Polyphase. • Built in ratings from ¾ H.P. to 5 H.P. • Underwriter approved for Class 1, Group D applications.

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Leland motors dominate all other makes combined for the unloading, transferring, and dispensing of gasoline. They lead because they best meet the exacting demands of the gasoline industry for a drive that is powerful, dependable, and unfailing in its safety.
Now Leland presents a new, even more efficient bulk station motor. In it are incorporated design improvements that make it the logical choice for your bulk station plant more definitely than ever before.
Obtain this new Leland motor . . . or the Leland gasoline dispensing pump motor . . . for comparison and test. Both possess a surprising amount of extra motor value. The Leland Electric Company, Dayton, Ohio.
LELAND
MOTORS

At the inauguration of Socony-Vacuum's new inland waterways service at Kansas City last year, this new diesel-powered twin-screw propelled towboat and barge were inspected by company officials. The barge and others like it will carry 400,000 gallons, equivalent to a trainload of tank cars. A "tow" may consist of as many as six barges

able gains in 1937 were the downbound movements from the St. Louis area and both up and down movements below New Orleans. This latter movement should not be confused with coastwise movements reported separately for this section of the river. Shipments originating in the Louisville and Pittsburgh districts of the Ohio river showed gains in 1937 but in the Huntington and Cincinnati districts of the river there were declines in originated shipments.

The federal projects on the rivers are far from complete. The major portion of the work on the upper Mississippi to provide a 9-foot channel is completed but not until 1940 will the work all be completed. A similar project was completed on the Ohio river in 1929 but still in the Ohio river basin, exclusive of the Tennessee river, the War Department has plans for more than 150 reservoirs, estimated to cost $800,000,000, according to Major-General Julian L. Schley, chief of army engineers. These are aimed to reduce flood stages and produce 2,000,000 kilowatts of power.

In the valley of the Missouri river, over 100 reservoirs have been planned. "The Missouri river of today is as tame as a lamb compared to what it was 20 years ago," wrote T. P. Craig of Joliet, Ill., to The Waterways Journal recently. It is true it only has a six-foot channel but that channel is as free of obstructions as any inland river, he said in answer to charges that the river is wild, treacherous, and unnavigable. When the Fort Peck dam and reservoir in Montana are completed in another year, navigation of the muddy Missouri will be possible nearly 1000 miles above St. Louis.

On the Great Lakes occurred one of the largest percentage increases in water movement of petroleum products in 1937. The 28 per cent increase in lakewise movements brought the total up 5,800,000 barrels to 26,420,000 barrels of refined bulk products, almost half of which originated at East Chicago on Indiana Harbors. Increases in receipts will be noted in the accompanying table for nearly every port. Cleveland showed the greatest actual gain in receipts with an added volume of over 1,200,000 barrels, bringing the port close to second place among lake ports in petroleum receipts.

Cleveland would have been in second place had not Superior also had an increase of over 1,000,000 barrels, making the cities practically tied for second place in volume of receipts. Detroit leads in receipts with nearly as great a volume as Superior and Cleveland combined. An extra million barrels also went into the Saginaw river and Bay City in 1937. Other large gains were nearly 800,000 barrels at Green Bay and 600,000 barrels at Muskegon.

Detroit gained 300,000 barrels for its already high figure now approaching 8,000,000 barrels. A factor slowing Detroit's tanker receipts now is the Detroit Southern refined oil pipeline supplying three-fourths as much oils from Toledo as the total tanker receipts. Another pipeline into Toledo from Shell's Wood River refinery, however, has continued to boost Toledo tanker shipments.

Nearly 1,600,000 more barrels of oil were shipped by tanker from Toledo in 1937 than in 1936 and oil shipments are said to have put Toledo on the map as the fifth largest port for all products in the U. S. in spite of being only the 27th city in population. In 1928 no oil was shipped or received by water at Toledo. In sharp contrast as far as gasoline tanker receipts are concerned is the 12th city, Milwaukee, twice the size of Toledo, with only Shell's marine terminal for petroleum products, no gasoline pipeline or refinery, and little more receipts by water than Traverse City.

The influence of Toledo on Great Lakes oil shipments is being felt apparently at Indiana Harbor, the center of the lion's share of lake shipments of petroleum products. Shipments of over 15,000,000 barrels in 1935 dropped 2,500,000 barrels in 1937. Crude shipments by tanker have been influenced by the Michigan-Toledo pipeline, so that 2,850,000 barrels shipped from the Saginaw river in 1936 dropped to 1,863,000 barrels in 1937.

Movement of Refined Petroleum Products on the Ohio River

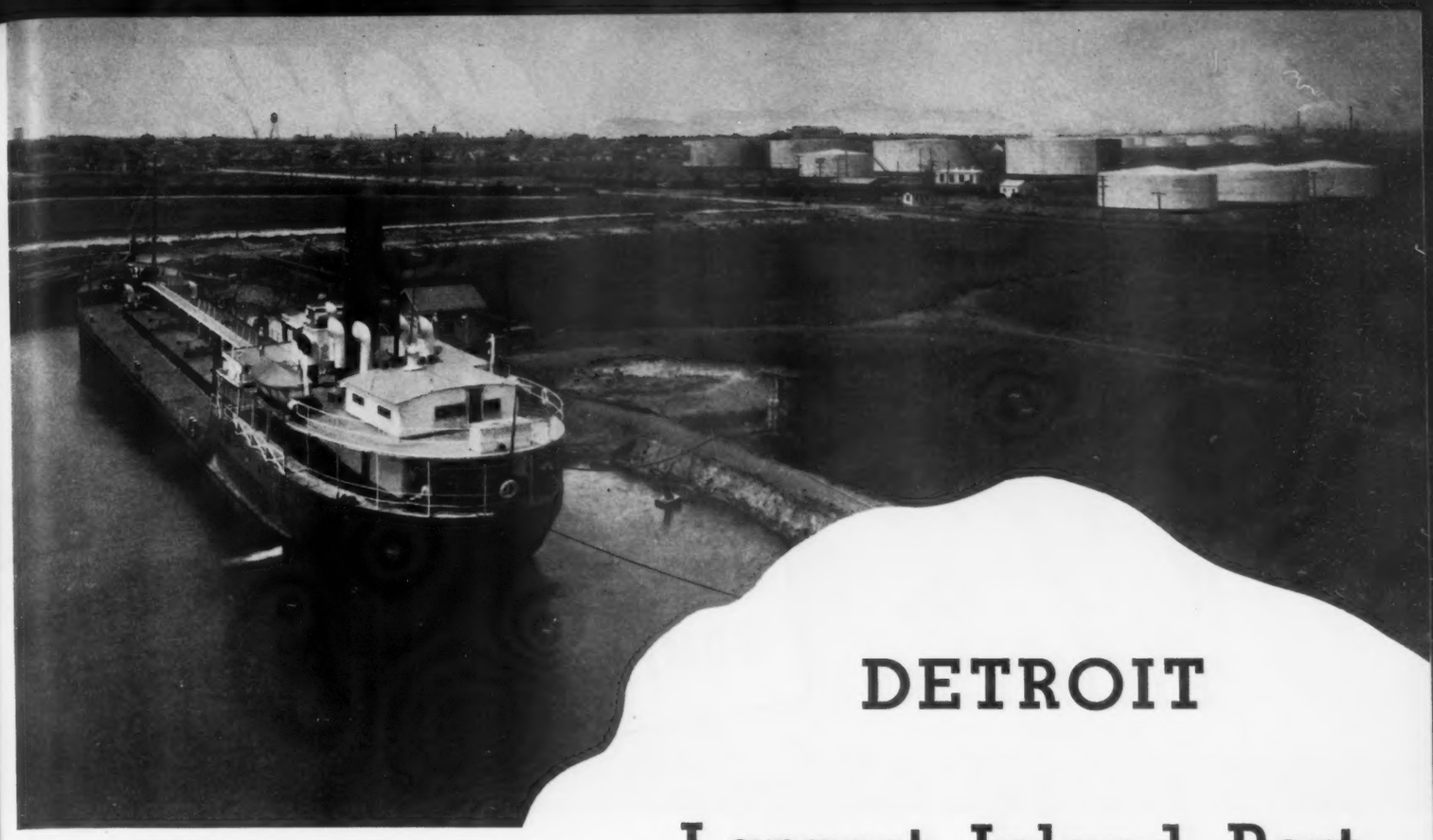
(*Figures in Barrels*)

Year	Inbound	Outbound	Upbound	Downbound	Total
1937	5,670,000	2,425,000	3,880,000	2,005,000	16,600,000
1936	4,980,000	2,195,000	3,545,000	2,220,000	14,770,000
1935	4,945,000	2,880,000	2,110,000	1,928,000	11,760,000
1934	5,405,000	2,186,000	499,000	1,520,000	9,490,000
1933	3,260,000	1,790,000	1,433,000	1,157,000	7,520,000
1929	1,247,000	345,000	2,370,000	338,000	4,310,000
1928	965,000	92,200	1,070,000	229,000	2,355,000

Continued increase of barging in 1938 on the Ohio river is shown by inbound shipments from the Mississippi during the first six months of 1937 and 1938. The gain was from 3,445,000 barrels to 5,160,000 barrels in the two periods.

Of the outbound traffic in 1937 from the Ohio, the Monongahela and Allegheny rivers received 2,220,000 barrels and the Cumberland river 2,070,000, practically all gasoline. Inbound includes traffic from Mississippi river and tributaries of the Ohio river. Outbound includes movement to the Mississippi and tributaries of the Ohio river but does not include portions of Inbound traffic destined for points on tributary streams. Upbound and downbound includes traffic originating on and destined for points on the Ohio river.

These two modern balloon-roof tanks were erected at a new Bettendorf, Ia., river terminal to store motor fuel. The tank on the left holds 10,000 barrels and the other 3000 barrels—Photo by Chicago Bridge and Iron Co.



The tanker Mexoil at the Detroit marine terminal of the Fuel Oil Corp. In the background is the marine terminal of Standard of Indiana, said to be the largest inland water terminal in the U. S. Pipeline terminal of the Fuel Oil Corp. is located in another section of the city

DETROIT

Largest Inland Port For Oil Receipts

TAKING advantage of water transportation to a greater extent, in obtaining its supply of gasoline, fuel oil and other oils than any other inland port in the U. S., is the city of Detroit.

With but small refining capacity—16,600 barrels of crude daily—this fourth largest city is ideally situated to receive many products by water either from up or down the lakes.

By way of comparison, Detroit's port receipts of 212,500,000 gallons of gasoline in 1937 are over 60 per cent greater than those of each of the next two inland ports, Superior and Cleveland, whose gasoline receipts were close to 130,000,000 gallons each. Tanker shipments of fuel oil to Detroit, 102,700,000 gallons in 1937, were more than double the receipts of any other port on the lakes.

Over 95 per cent of the 1937 tanker shipments of gasoline received at Detroit originated in the Chicago area, while the fuel oil shipments were split between Chicago and Toledo. In addition to the products received by water, the city received in 1937 close to 175,000,000 gallons of gasoline and fuel oils through the Detroit Southern pipeline from Toledo. The remainder entered the city by rail.

The area in which gasoline and other oils are distributed from Detroit terminals is determined roughly by drawing a line around the city halfway between Detroit and other lake ports on or near the border of Michigan, principally Bay City on Lake Huron, Muskegon and St. Joseph on Lake Michigan, Chicago, and Toledo. This can be appreciated more fully by a glance at the map of Michigan. This leaves Detroit with an area extending roughly 50 miles north, 75 miles northwest, up to 100 miles west and southwest, and 25 miles south.

The growth of tanker shipments of gasoline to Detroit has been a development of the past 17 years, mainly before 1929 since no appreciable gain in volume was made after that year until 1937, as shown in the accompanying table. In 1922, the first year Detroit received gasoline by tanker, the total volume was comparatively high, 1,800,000 barrels. This increased to 2,735,000 barrels in 1924 and then dropped back nearly to the initial figure in 1925. This figure more than doubled in the next four years.

All other petroleum products, largely fuel oil and kerosine, dropped off in volume until 1928, when they reached 500,000 barrels. In two more years this figure was more than doubled and in five more years redoubled. Since 1934 the Detroit Southern pipeline has been a factor affecting water shipments and still the port receipts increase at Detroit and tanker shipments increase out of Toledo at the other end of the line.

ACCOMPANYING the development of gasoline pipelines in the past five years has been transport trucking, which is now a large factor in the distribution of gasoline and other oils from Detroit water terminals to bulk plants in the Detroit area. It has been estimated by good authority that transport trucks now handle 8,000,000 gallons per month or close to 100,000,000 gallons annually in the Detroit area, the major portion of which originates at the marine terminals. Five years ago practically no distribution of this kind existed.

The percentage of shipments from Detroit marine terminals by transport truck varies widely. Although no figures are available Standard of Indiana is said to be going into this method of transportation in a big way. Another

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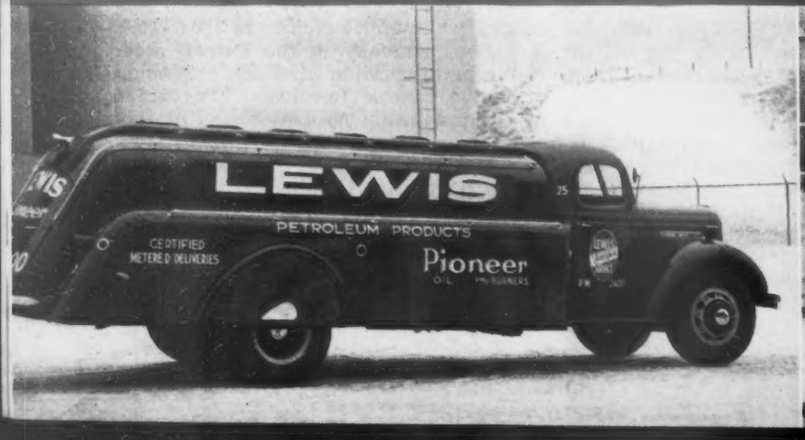
MILWAUKEE, WISCONSIN HILLSIDE, NEW JERSEY

HEIL DE LUXE TANKS

BELOW LEFT: 1500 gallon, 6 equal compartment full streamline Heil fuel oil transport tank. RIGHT: 1000 gallon, 3 compartment tank fully equipped for fuel oil delivery



HEIL TRAILERIZED TANKS

ABOVE: 8000 gallon Heil Train. Both units are 4000 gallon TRAILERIZED (Frameless) Tanks for bulk hauling.

BELOW: 4000 gallon, 3 compartment Heil TRAILERIZED Tank in the service of Mr. I. O' Boyle, Washington, D. C.

HEIL LIGHT DUTY TANKS

BELOW LEFT: 600 gallon, 4 compartment transport tank. Notice smooth skin construction and vertical barrel rack. RIGHT: 1800 gallon, 4 compartment semi-streamline tank for hauling gasoline and fuel oil.

The Growth of Water Shipments Into Detroit By Water, 1922-1937

Figures in barrels, as reported by the U. S. Engineers Office

	Gasoline	Fuel Oil	Kerosine
1937	5,054,000	2,282,000*	152,900
1936	4,383,000	2,445,000	220,300
1935	4,100,000	2,143,000	193,400
1934	3,872,000	1,467,000	150,800
1933	3,642,000	1,206,000	28,100

	Gasoline	Other Petroleum Products
1932	3,436,000	1,291,000
1931	3,484,000	1,626,000
1930	3,758,000	1,190,000
1929	4,260,000	561,000
1928	3,643,000	500,000
1927	2,768,000	197,500
1926	2,294,000	228,000
1925	1,872,000	176,000
1924	2,735,000	333,500
1923	2,600,000	282,500
1922	1,800,000	334,000

*248,600 barrels of crude oil were received also in 1937 which may have been burned as fuel.

of the leading oil companies reports 85 to 90 per cent by truck, another 25 per cent, and still another 100 per cent by rail. One of the smaller companies reported it had made no rail shipments since the last rate advance of 10 per cent. No figures on the volume of rail shipments in or out of Detroit are available.

One of the most interesting methods of reshipment from a marine terminal is employed by Fuel Oil Corp., a subsidiary of the Great Lakes Transportation Corp. For industrial consumers on the Detroit and Rouge rivers the company uses a 5000-barrel barge towed by tugboat. The barge has its own pump driven by a gasoline engine for loading and unloading.

More than 90 per cent of Detroit's water-borne gasoline and other oils is terminaled on the River Rouge where five major companies have storage capacity for between 115,000,000 and 120,000,000 gallons. These include Standard of Indiana, The Texas Co., Gulf Refining Co., Cities Service Oil Co., and Shell Petroleum Corp. Six more companies have between 10,000,000 and 15,000,000 gallons storage, it has been estimated, part on the River Rouge and part on the Detroit river in Detroit, Ecorse, Riverview, and Trenton, suburbs of Detroit. These include Thiessen Clemens, Fuel Oil Corp., Austin Oil Co., Plymouth Oil Co., Globe Oil and Refining Co., and Ohio Oil Co.

While Socony-Vacuum Oil Co. (White Star division) received a small volume of gasoline in 1937 for distribution in Detroit from Buffalo or farther east on the New York State Barge Canal, fewer and fewer Socony tankers are crossing Lake Erie as the capacity of the White Star refinery at Trenton is increased. When the present expansion program is completed, there is a possibility that one or two Socony tankers will remain on the lakes to supply Michigan and Ohio distributors from the refinery.

Principal changes in the past year or so have been the re-entry of Charles E. Austin into the oil business with the formation of the Austin Oil Co. and the taking over of the Sunny Service Oil Co. plant, formerly headed by Austin, by Plymouth Oil Co. The Austin Oil Co. built a tank on the River Rouge over a year ago but, it is reported, due to injunctions and legal entanglement no gasoline was put into the plant until June of this year. Both of these companies, it is understood, have no fixed source of supply, but buy on the open market.

The time required for a tanker to make the round trip from Chicago is about six days. This allows two and a half days coming, two days for return, a half day each for loading and unloading, and a half day for average weather delay. The cost of water transportation has been estimated to be about a half cent per gallon for gasoline although, under conditions such as prevail with Standard of Indiana with its five large tankers, its costs probably figure considerably lower than this, one authority believes. Costs for fuel oil and crude oil are slightly higher because they are heavier, are dirty products, and the tankers ordinarily used for these oils are smaller in capacity.

Some idea of the extent of the Detroit market for gasoline may be had from the last census of retail distribution in 1935 which showed for Wayne county, in which Detroit is located, a total of 2158 filling stations with sales of $34,772,000. This is roughly one-fourth of the stations in the state of Michigan and slightly over a third of the sales volume.

The city and county are enjoying somewhat lower prices than other points in Michigan, Indiana, and Ohio due to competitive conditions and the present wave of retail price cutting. It is claimed certain companies are cutting prices to extend their marketing operations.

Compartment Tank Cars Now Carry Light Oils

An increased demand for compartment cars for light oils and for insulated cars for asphalt, and fusion welding of cars in propane service are recent developments reported in the field of tank car transportation.

The compartment tank car formerly was used almost exclusively for lubricating oil shipments. Now with lighter buying by marketing companies and with a larger number of light oil products being sold by refining companies, a wider use for compartment cars has been found.

The increased demand for insulated tank cars for asphalt service is laid to the additional amount of asphalt required for road construction in WPA projects. Contractors are reported asking for asphalt shipments in insulated tank cars so that temperature changes will be reduced, and less heat or possibly none will be required for unloading the asphalt at destination.

The latest development in tank car construction is reported to be fusion welding on cars for propane service. Experimental work on such cars was authorized by an order of the Interstate Commerce Commission eleven months ago. With fusion welding it is claimed the cars can be built in shorter time.

Cars for propane service must be gas tight, and withstand a pressure of 300 pounds per square inch, about five times the requirement for ordinary cars. These cars are made of one-inch steel which is more than twice the thickness of shells of ordinary cars.

A propane car is construction of three cylinders, with two sheets of steel fusion welded. The three cylinders are brought together to make the finished tank, but the seams on the cylinders are staggered. This tank then is covered with four inches of cork insulation. The outer jacket protecting the cork insulation is of ⅛-inch steel. Propane cars have no bottom outlet. The loading and unloading valves and equipment is in the dome.

Propane is loaded at around 50 degree temperature. The cars are loaded only half full, the remainder of the space being for expansion. The dome houses loading equipment, and is not for expansion. Valves are set for about 225 pounds pressure.

Gasoline Pipelines Reach Half of U. S. Population

By Allen S. James
N. P. N. Staff Writer

Preparing a gasoline pipeline to drop into its trench

COMPLETION of the 1938 major gasoline pipeline project—from a refinery near St. Louis to points in Ohio—has closed an important territorial gap in the area served by this transportation medium.

The new line links that territory served by gasoline pipelines originating in the Mid-Continent refining district with the territory served by the lines leading inland from the Atlantic coast and the short lines within Ohio.

Gasoline pipelines accordingly have become an economic factor in the distribution of motor fuel and other refined products from certain refineries and tanker terminals to bulk plants, inland waterways terminals and retail outlets in one solid area that lacks but little of being the entire northeastern one-fourth of the U. S. With almost 50 per cent of the country's population located in this one area, it represents greater motor fuel consumption than any other corresponding territory in the country.

While the volume of refined oils, almost entirely motor fuel, or motor fuel materials, transported through the pipelines into this territory reached a total of nearly 3,200,000,000 gallons in 1937—and two systems were lacking which were completed in 1938—the lines did not account by any means for all the motor fuel movement into these states, as can be seen when it is recalled that total gasoline consumption in the country last year was about 21,000,000,000 gallons.

For example, this movement of gasoline by pipeline does not include barge and tanker movements on the rivers and Great Lakes, with subsequent truck movement, or truck and rail hauls from refineries in this area receiving their crude from nearby states or by pipeline from the Mid-Continent, or all-rail shipments from independent refiners in the southwest.

Four of these gasoline pipelines originate in the Mid-Continent refining district and reach a part or all of the middle west. Two lines carry refined products from certain Atlantic coast refineries and tanker terminals into Pennsylvania and New York, and a third not only serves portions of those two states but also reaches well into Ohio.

The newest line taps major portions of Illinois, Indiana and Ohio. The short lines within Ohio and adjacent territory help to keep the general area unbroken.

A visual picture of this area can be obtained from the accompanying map. In studying it, however, the fact should be kept in mind that it would be virtually impossible to chart accurately the countless destination points that make up its actual boundary without checking into shipments of all refiners using the lines. The map accordingly is intended only to show in general the area that is being served, the boundaries being based on the average distance gasoline is moved from the various pipeline terminals.

The average distance from terminals to ultimate destination for gasoline from the lines originating in the Mid-Continent is reported to be 200 miles. The same distance is said to be the average for the new line from near St. Louis to Ohio points, although the company owning the line at present has not attempted to distribute from it much if any south of the Ohio river. Distribution from the short lines in and near Ohio is said to be within a radius of 50 miles from the various terminals. The exact distances reached from the terminals of the lines originating on the Atlantic coast are not known but the estimates as shown on the map are believed to be sufficiently accurate to give an idea of the proportion of the population in this country that is served its motor fuel in part by pipeline.

DEVELOPMENT of pipeline transportation of motor fuel and other refined products within this huge area has been accomplished within the past nine years. The first line was placed in operation in 1930. It had formerly been a crude oil line used to transport western Pennsylvania oil to Atlantic coast refineries. The line was rehabilitated, its pumping system changed and it became a gasoline carrier from the coast inland to western Pennsylvania distributing points.

Since that first venture some nine years ago, nine other major and semi-major gasoline pipeline projects have been developed, as the economy and efficiency of this method of transporting refined products to heavy consuming areas became more apparent. The 10 most important lines now in operation are listed and summarized in Table No. 1.

There is no doubt that these gasoline lines have provided their owners and users with an extremely economical method of moving refined products from the refineries to consuming territory. The lines have permitted these

Executives Turn

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STRAIGHT TANK-TRUCK

Operating Cost per mile	26½c
Gasoline Cost per mile	3c
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*Based on 15,000 miles per year

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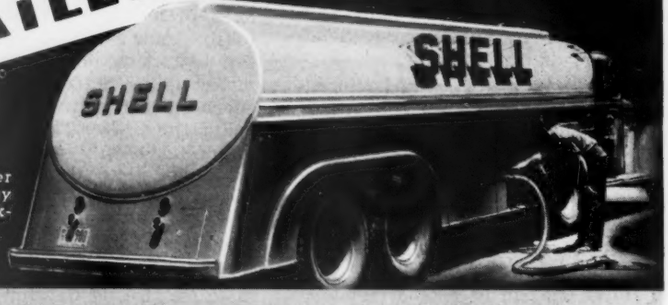

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REPLACEMENT of company-owned stations by independent dealers results in a "hand-to-mouth" buying policy, with individual deliveries smaller and the total number of stops greater. Offset this increase in transportation costs with the economy of Fruehauf Trailers!
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TABLE NO. 2—Member Companies of Great Lakes Pipe Line Co. and the Amount of Shares They Hold as Reported by ICC in 1934, Together with Dividends for 1937 Based on Rate of $36.67 Per Share*

Name of Corporation	No. Shares Held**	Per Cent of Stock Ownership	Amt. of 1937 Dividend Based On $36.67 Per Share
Barnsdall Refining Co.	4,117	3.0	$ 150,970.39
Continental Oil Co.	42,815	31.2	1,570,026.05
Mid-Continent Petroleum Corp.	27,446	20.0	1,006,444.82
Phillips Petroleum Co.	6,860	5.0	251,556.20
Pure Oil Co.	13,722	10.0	503,185.74
Sinclair Refining Co.	4,116	3.0	150,933.72
Skelly Oil Co.	20,584	15.0	754,815.28
The Texas Corp.	17,563	12.8	644,035.21
Total	137,223	100.0	$5,031,966.81

*One other company has since acquired an interest in this line.
**From I.C.C.'s Valuation Docket No. 1218, Page 18.

refiners to save a sizeable portion of the transportation costs that formerly went to the railroads. By so doing certain refiners in the oil producing states and along the eastern seaboard have been able to compete more successfully with refineries in other areas which obtain their crude supplies by pipeline from the producing states.

An idea of just what these lines have meant to their owners can be obtained from a recently issued bulletin of the Interstate Commerce Commission. The bulletin contains selected financial and operating statistics from annual reports of pipeline companies for the year ended Dec. 31, 1937.

The bulletin shows, for example, that the Great Lakes Pipe Line, with its 2081 miles of lines, handled for its member companies in 1937 a total of 18,435,209 barrels of refined oil, of which 13,330,400 barrels originated on its own lines and 5,104,809 barrels were received from connecting lines. The net income of the line for the year was given at $5,088,955.

The report also shows that the Great Lakes Pipe Line Co. had a dividend appropriation in 1937 of $5,031,967, which represents $36.67 per share on 137,223 shares of stock.

Assuming that there has been no change in stock ownership as listed in the Interstate Commerce Commission's valuation docket No. 1218 between Dec. 31, 1934 and Dec. 31, 1937, the amount of dividend each of the eight member companies obtained in 1937 is shown in Table No. 2. It will be recalled, however, that this year a ninth company, Cities Service Oil Co., acquired an interest in the line which undoubtedly caused some realignment of stock ownership.

The Phillips Pipe Line Co., according to the I. C. C. report, operated 799 miles of pipeline, handled 10,840,113 barrels originating on its own line, and 3,266,778 barrels received from other lines, making a total handled of 14,106,891 barrels. Its net income was $2,844,063.

The other gasoline pipelines listed in the report did not have nearly as high a net income per barrel handled as did the Great Lakes and Phillips companies. A comparison of the income of the various lines can be obtained from Table No. 3.

The tariffs for the pipelines originating in the Mid-Continent are the equivalent of the rail rate from Group 3 (Oklahoma) to destination. The marketer who obtains his requirements from a member-company of the Great Lakes group is charged with the rail rate from Group 3 to his bulk plant, although actually the gasoline may have been loaded in the tank car and shipped to him from a pipeline terminal less than 25 miles away. The pipeline company pays the rail rate from the nearest terminal to destination, and its revenue is obtained from the difference between the Group 3 rate to destination and the short-haul rail rate from the terminal to destination, less operating costs.

The present pipelines are reported to have a combined capacity of approximately 145,000 to 150,000 barrels daily. This does not mean, however, that these lines are pouring out this volume of refined products day after day. The rate of delivery is dependent a great deal on the rate of demand.

A refiner in the Mid-Continent, for example, may tender 50,000 barrels of motor fuel to the Great Lakes line and that gasoline may remain in the line for some time before it reaches a terminal. Each of the terminals have storage facilities for its member companies and the rate of pumping through the line depends entirely on the rapidity with which those storage tanks are emptied.

The rate of pumping accordingly has little effect on ultimate delivery to destination. In fact, orders can be filled far more rapidly from the terminals than they can by rail shipment from the refining centers despite the fact actual movement of the products through the line is considerably slower than rail movement.

The actual time of delivery to destination depends on the speed of filling tank cars and moving them the relatively short distance from the nearest terminal to destination, and jobber accordingly can operate on smaller inventories than where it might take him a longer time to receive supplies from his refinery source.

Each pipeline has what is generally referred to as "inventory line fill," which represents the amount of liquid that remains in the pipeline system at all times. The amount of this inventory line fill depends entirely on the length and size of the lines. The Great Lakes Pipe Line Co., for example, listed in 1934 a total of 296,869.99 barrels of gasoline as "inventory line fill." The line's capacity at that time was 370,345 barrels it was reported.

Rapid strides in operation of gaso-

TABLE NO. 3—Breakdown of ICC Report on Gasoline Pipelines, Showing Net Income for 1937, and Amount of Refined Oils Handled. (Figures from ICC Statement No. 3848)

Name of Company	No. Miles In System	Reported Net Income	Refined Oil Originating On Own Lines (Bbls.)	Refined Oil From Connecting Lines	Total Refined Oil
Great Lakes Pipeline Co.	2081	$5,088,955	13,330,400	5,104,809	18,435,209
Phillips Pipeline Co.	799	2,844,063	10,840,113	3,266,778	14,106,891
Tuscarora Oil Co. Ltd. (S.O. N.J.)	605	554,649	6,185,220	.....	6,185,220
Atlantic System					
Keystone P. L. Co.	656	1,255,437	10,512,728	99,116	10,611,844
Buffalo P. L. Co.	161	12,661*	.....	287,308	287,308
Sun Oil Co. System					
Susquehanna P. L. Co.	611	659,250	12,378,456	153,963	12,532,419
Sun P. L. Inc.	90	223,435	.....	1,886,714	1,886,714
Middlesex P. L. Co.	56	60,111	.....	4,239,194	4,239,194
Sun Oil Line Co.	98	388,556	.....	2,437,166	2,437,166
Detroit Southern P. L. Co. (Pure)	85	164,860	4,160,728	.....	4,160,728
Totals			57,407,645	17,475,048	74,882,693

*Figures cover period Nov. 4 to Dec. 31, 1937.

line pipelines have been recorded since the first line was placed in operation in 1930. Some of the lines now handle as many as nine refined oils without the slightest contamination.

One pipeline company, for example, transports various grades of motor fuel and butane through its line. A member of the Great Lakes line moves natural gasoline from one of its plants and a certain grade of motor fuel from its refinery, the two tenders being turned into tankage at Kansas City for blending before being picked up and moved on to other terminals for distribution.

The Socony-Vacuum Oil Corp.'s White Eagle division, operating a pipeline from its Augusta, Kans., refinery to a river terminal at Kansas City, handles a number of light oils in series with no contamination and with virtually no loss in shipment. The line is equipped with instruments which record at all times the gravity of the oil in the line and the operator at the terminal end has only to watch this instrument to turn a newly arriving product into its proper storage tank.

The Shell Pipe Line Co., is reported to be planning to move six or eight light oils through its automatically-controlled pipeline from the Wood River, Ill., refinery, near St. Louis, to Lima and Springfield, O., and thence through the Standard Oil Co. of Ohio's line from Lima to Toledo.

Reports current in the Mid-Continent are that the Shell company has some mechanical features that are new in the gasoline pipeline field. The company, however, has declined to date to make any announcements pending a complete test of the system.

A survey of gasoline pipeline activities the past year reveals several extensions, two new systems, and the looping of another system at certain points.

The Shell line and the three short lines by the Standard Oil Co. of Ohio constituted the entirely new systems.

The Great Lakes company has looped its line at certain points.

Table No. 1—Data on Ten Gasoline Pipelines

Great Lakes Pipe Line Co.

Owned by nine member companies—Continental Oil Co., Barnsdall Refining Co., The Texas Corp., Sinclair Refining Co., Skelly Oil Co., The Pure Oil Co., Mid-Continent Petroleum Corp., Phillips Petroleum Co. and Cities Service Oil Co.—marketing in the middle west. Line extends from member companies' refineries in Mid-Continent northward to Kansas City, Des Moines, Omaha, Minneapolis and Chicago. Mileage of line—2081 miles.

Phillips Pipe Line Co.

Subsidiary of the Phillips Petroleum Co. Line extends from company's refinery at Borger, Texas, through Kansas City to St. Louis. Mileage of line—799. Line connects with Great Lakes line at Kansas City.

Cimarron Valley Pipe Line Co.

Subsidiary of Champlin Refining Co. Line extends from company's refinery at Enid, Okla., to Superior, Neb., with an intermediate terminal at Hutchinson, Kans. Approximate mileage—225.

Socony-Vacuum Oil Co.
(White Eagle Division)

Line extends from Augusta, Kans., refinery through Topeka to Kansas City, where company operates a river terminal for barging down the Missouri river and up the Mississippi river as far as St. Paul. Mileage—177. The Socony-Vacuum Oil Co. also operates 100-mile line from its Providence, R. I., refinery to Worchester and Springfield, Mass.

Shell Pipe Line Co.

Subsidiary of Shell Petroleum Corp. Line extends from refinery at Wood River, Ill., through Terre Haute and Indianapolis to Lima, O., with a branch line to Springfield, O. Line connects at Lima with Standard Oil Co. of Ohio's line to Toledo, for delivery of Shell products to the company's terminal at the latter city. Mileage—approximately 450.

Keystone Pipe Line Co.
Buffalo Pipe Line Co.

Subsidiaries of Atlantic Refining Co., operating lines from its Philadelphia refinery to points in New York as far north as Buffalo and Rochester, and through Pennsylvania as far west as Pittsburgh. Mileage—817.

Susquehanna Pipe Line Co.
Sun Oil Line Co.
Sun Pipe Line, Inc.

Subsidiaries of Sun Oil Co., operating from its Marcus Hook refinery through Pennsylvania and to Cleveland; northward through Pennsylvania and New York to Syracuse, and eastward to Newark, N. J. Mileage—855.

Standard Oil Co. (Ohio)

Operates three short lines, one from Latonia, Ky., refinery to bulk plant in southwestern Ohio, a second from Cleveland refinery to Canton, and a third from its Lima refinery to Toledo.

Detroit Southern Pipe Line Co.

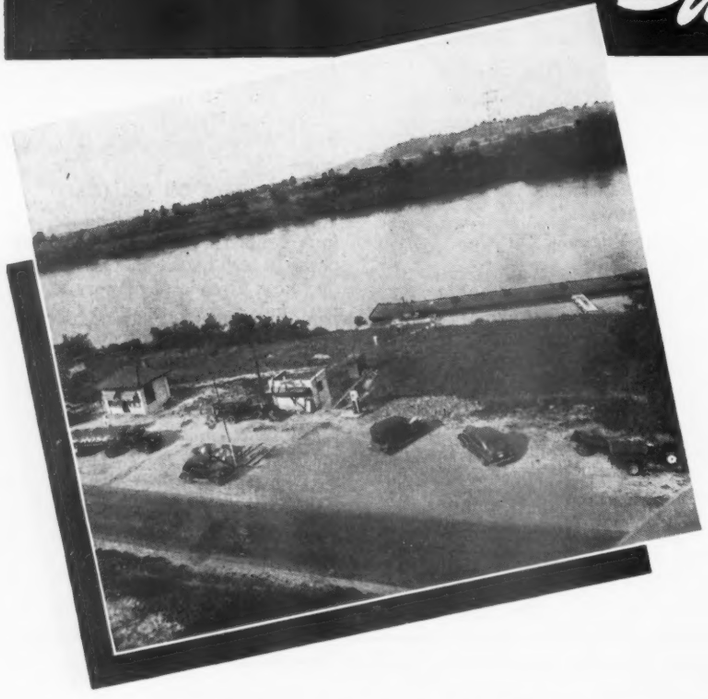
Subsidiary of Pure Oil Co. from its Toledo refinery to Detroit, distance of 85 miles.

Tuscarora Oil Co. Ltd.

Subsidiary of Standard Oil Co. of New Jersey, operating a line from its Bayway, N. J., refinery through Pennsylvania to Midland, Pa., on the Pennsylvania-Ohio line. Mileage—605.

The territory now served by the gasoline pipelines originating in the Mid-Continent refining district, within Ohio, and on the Atlantic seaboard, is shown by the white area in the above map. This area represents approximately 25 per cent of the area in square miles in the United States. The population in the states touched by the distribution from the pipeline terminals represent almost 50 per cent of the entire population of the United States. This same territory of course also receives motor fuel supplies by other mediums of transportation

from DERRICK VIA BARGE AND *with* VIKING



- **THE PLACE:** The unloading dock of the Guarantee Oil Company of Aurora, Indiana.
- **THE JOB:** Unloading a barge of 350,000 gallons of gasoline which has been shipped directly from the oil fields of Texas, via Inter-Coastal Canal, Mississippi and Ohio Rivers.
- **THE TEMPERATURE:** At the time photograph was taken and during the actual unloading, the temperature stood at 100 degrees F., the barge registered 135 degrees F. and the gasoline itself 84 to 90 degrees F.

VIKING CARGO PUMPS present a profitable combination . . . they are ruggedly built to guarantee constant performance under the roughest, toughest conditions . . . they are precision designed to save you money on every pumping job. Viking Cargo Pumps handle all types of petroleum products with like efficiency, and in this job of "tank stripping" they know no equal. We've put the complete story in Bulletin 2100-35. Why not write for your copy today?

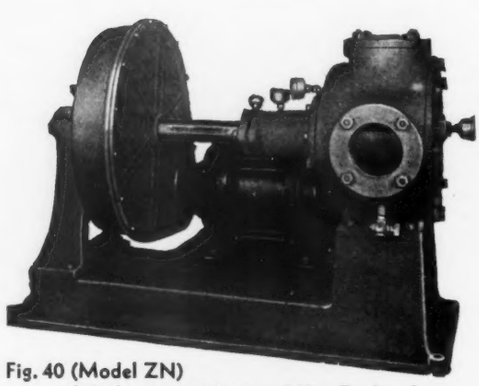


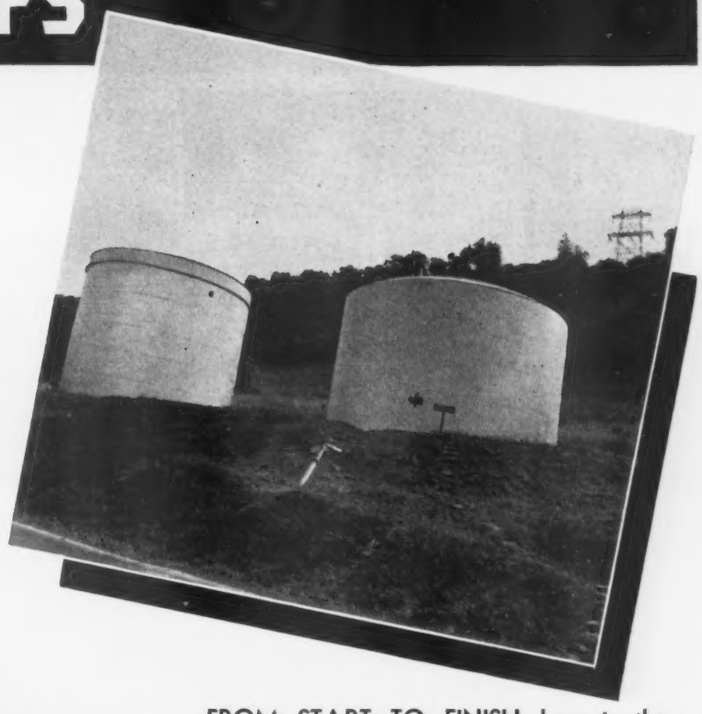
Fig. 40 (Model ZN)
Self Contained Motorized Unit For Land Terminal Service

Viking offices for sales and engineering service are located in the following cities:

CHICAGO	MINNEAPOLIS	CINCINNATI	PHILADELPHIA
CLEVELAND	NEW YORK	DETROIT	PITTSBURGH
INDIANAPOLIS	BALTIMORE	HOUSTON	RICHMOND
LOS ANGELES	BOSTON	KANSAS CITY	SAN FRANCISCO
MILWAUKEE	BUFFALO	NEW ORLEANS	ST. LOUIS
			TULSA

to DEALER....

TANK TRUCK ROTARY PUMPS



- **THE TIME:** Even against this terrific heat the barge was unloaded in the amazingly fast time of only 20 hours.
- **THE PUMP:** A Model ZN Viking Rotary Pump which, since installed, has handled over 6,000,000 gallons of gasoline.
- **THE LIFT:** The gasoline is pumped through a 6″ pipe up to two storage tanks; one a 250,000 gallon size, the other 300,000. Bottom of tanks are 80 feet above pool stage of river and are 32 feet high. Tank trucks load here for distribution to dealers.

Fig. 120—Viking Truck Mounting Unit

FROM START TO FINISH, here is the finest Truck Mounting Pump on the market today. It's a demon for work and built to stand plenty of hard usage on tank trucks of all makes and sizes. An important feature of this new Viking Unit is the casing . . . easily turned to fit your piping, it eliminates "right" or "left" hand ports—makes installation a simpler task. Also another brand new feature is the easy lock nut arrangement for adjusting the thrust bearing . . . positive . . . simple . . . dependable. Available in 35, 50, 90 and 200 GPM sizes the new Viking Truck Mounting unit is interchangeable with all former models. Write for Bulletin 1505-37 and learn the complete facts.

VIKING PUMP COMPANY
CEDAR FALLS, IOWA

Control Equipment Simplifies H

The truck loading rack and dispatcher's control room at the Coastal Oil Co. marine terminal. From his desk in this office, the plant operator can see every part of the terminal and has at his finger tips complete control of pumps, lights, and meter readings of outgoing products

THE importance of water transportation to the oil industry is conclusively indicated in the many engineering advancements that have been applied to marine terminals, tankers, and barges. The growth of pipelines and the ingenious developments in tank trucks, both of which contribute heavily to the efficiency of water transportation, reflect the unceasing swing toward a lower cost of moving petroleum products by water.

With the oil industry, as with few other industries, engineering and technical ingenuity have set a pace that challenges the ability of the most able historian to record. Changes and improvements have literally walked on each other's heels.

Inland and coastal waterways are guiding tankers and barges to an ever increasing number of strategically located marine terminals, from which bases pipelines, trucks and tank cars haul the petroleum products to secondary distribution points.

As the U. S. Army Engineers continue their active program of widening and deepening inland waterways, the dredging in many cases has scarcely been completed before oil companies have moved in to build marine terminals along the banks.

Along the east coast, the marine terminal is as necessary a part of the oil industry as the service station or the tank truck. A number of these terminals, in addition to handling their own company products, are equipped with sufficient storage capacity to lease out certain tanks for the use of fuel oil dealers who do a large volume of business but who are not in a position to build or operate a marine terminal of their own.

Contacts made with marine terminal operators along the east coast indicate that the leasing of marine terminal storage to dealers and jobbers is a coming development that should work to the benefit of the small marketer.

One of the newest and most modern marine terminals along the eastern seaboard is owned and operated by the Coastal Oil Co., Newark, N. J. With ground space sufficient for a potential expansion to 1,000,000 barrels, this plant began operation on Oct. 1 this year, with 180,000 barrels of completed storage, sectionalized into tankage of varying capacities.

THE plant fronts on Inshore Channel, an arm of Newark Bay, and occupies Port Newark property adjacent to the many large industries which recently have put up plants in this area. Inshore Channel is large enough to enable ocean-going tankers to turn around, and quick barge travel is possible to any tidewater point in the metropolitan area. Spur tracks on the property connect with three principal railroads in the vicinity.

This terminal is of interest for two particular reasons. One, it embodies many modern engineering features, and two, it is a forerunner of a type of plant operation which many predict will eventually become commonplace.

The Coastal Oil Co. proposes to operate on a program broad enough to

Handling at Marine Terminal

give the company wide scope in the industrial field. Petroleum products will be wholesaled to dealers, both in vehicle and bulk lots, and storage tanks will be leased to larger dealers. Moreover, operations will not necessarily be confined to petroleum products, but storage may be leased to dealers in other types of liquid products.

The outstanding feature of the plant is the design of the combined truck loading rack and dispatcher's office. This unit serves as a central control house for the operations of the plant. Here the operator sits at a desk in a completely glass-enclosed office. The floor of the office is elevated above the ground level so that the dispatcher can see over the tops of the trucks, and practically every part of the plant.

For the convenience of the dispatcher there is a two-way public address system which connects his office with the truck loading rack bays and with the pump house. From his desk he can carry on a conversation with men at these points.

Lines leading from the storage tanks enter the lower level of the dispatcher's control room from beneath the ground level. Here, beneath the operator's floor are located the air and moisture eliminators, each in turn being piped to a general receiver or residue tank which can be emptied back to the storage tanks whenever necessary.

Piping, eliminators and strainers are so arranged that any moisture entering the system can be drained at three elevations, thus eliminating any possibility of water entering the meters.

On the upper deck of the control room, in the dispatchers' office, are located the meters, each one equipped with a ticket printer device. The meters are divided into two groups, one bank of five being on one side of the room and the other bank facing them on the other side. From the control room, on either side, reach out the truck loading bays. On one side of the control house, and adjoining it, are three truck bays which serve the peddler trade. The meters in the control room serving this group of bays are equipped with vertical dials which face outward toward the trucks so the truck operator can see the volume he is receiving.

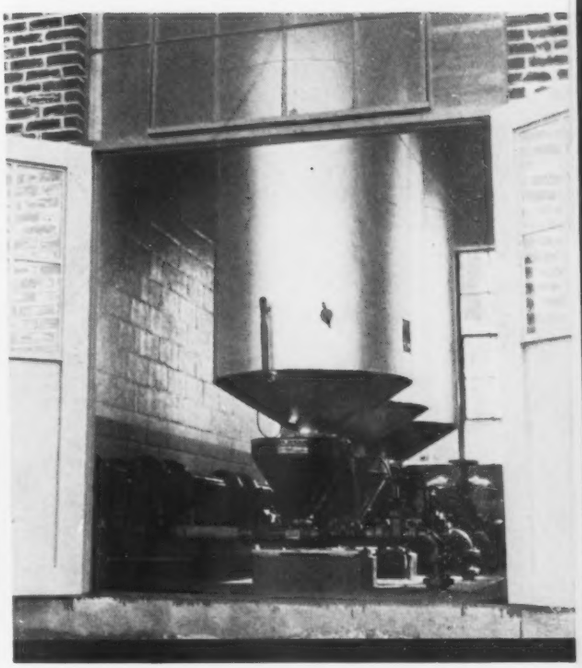
On the opposite side of the control house is another truck loading rack with four bays which serve the company's own trucks. The meters serving these bays are not dial-equipped, the reading being taken from within the control room on the ticket printing indicator.

An added feature of the truck loading rack system is found in the fact that all equipment, such as meters, eliminators, strainers, valves and accessories are housed within the building and thus free from the hazard of freezing weather.

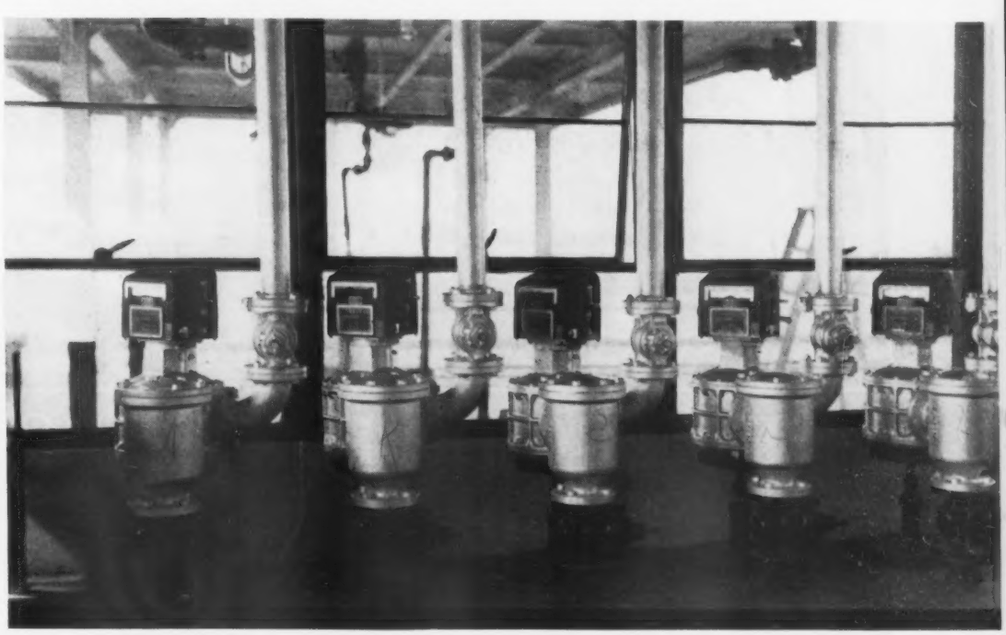
The meter strainers are located on the same floor level as the meters, so they are readily accessible for cleaning.

Safety precautions have not been overlooked in the design of this plant. A modern and complete foam system is provided throughout the entire plant. In the foam house, a 75-horsepower motor drives a 1000-gallon per minute pump at 100 pounds pressure. There are three strategically located fire equipment houses on the plant grounds. The equipment in each of these hose houses consists of a fire hose, foam hydrant, axe and crow bars.

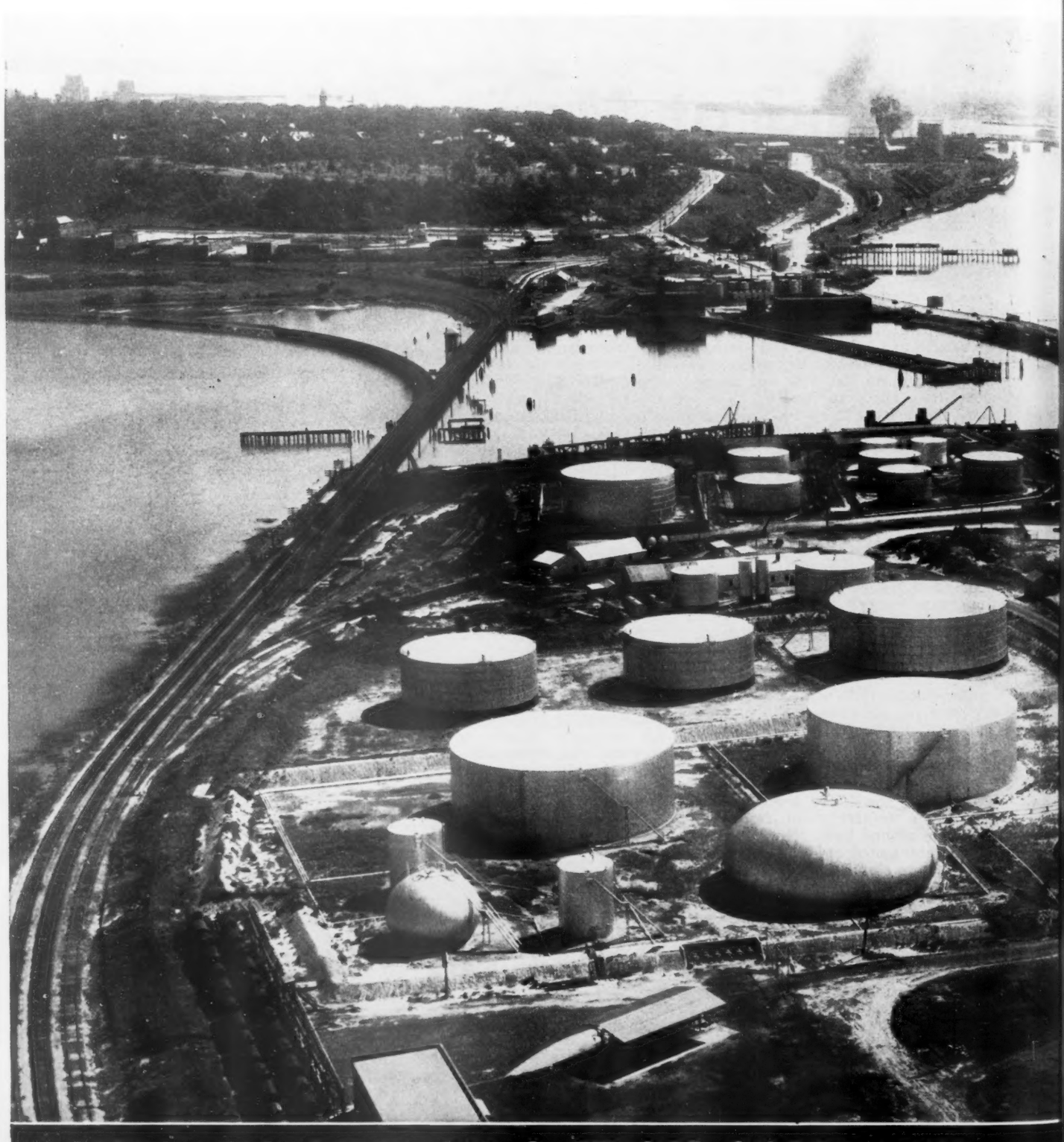
As a further safety precaution, a



Foam generating units at the Coastal Oil Co. marine terminal. A 1000-g.p.m. fire pump in this house provides 100 pounds pressure and is driven by a 75-horsepower motor



One of two batteries of meters, strainers and ticket printers located in the dispatcher's office at the Coastal Oil Co. marine terminal. Air and moisture eliminators are located on the floor below



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Tulsa	1607 Hunt Bldg.	Detroit	1513 Lafayette Bldg.	Los Angeles	1422 Wm. Fox Bldg.
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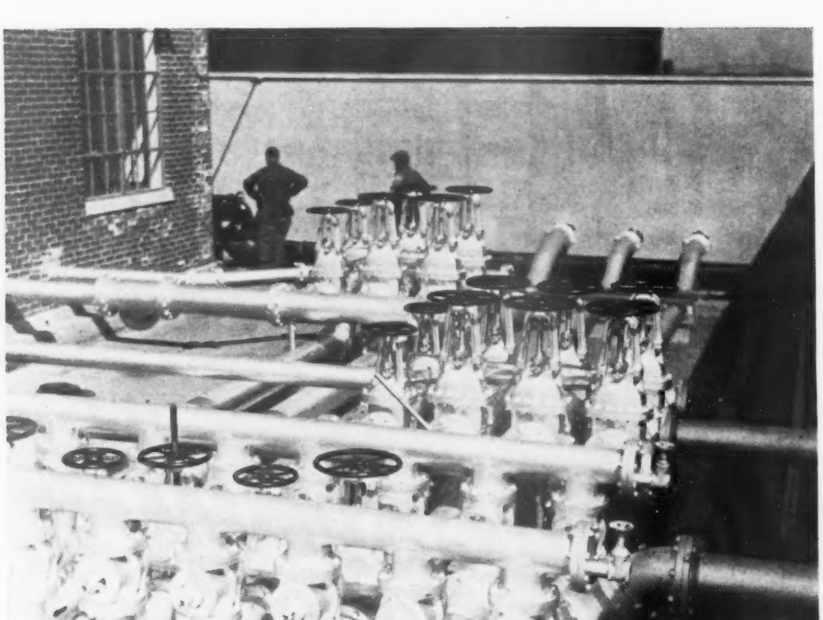
PHOTO: Fairchild Aerial Survey, Inc.

HORTONSPHEROIDS for pressure storage of quality gasoline

THERE are good reasons for the steadily increasing popularity of Hortonspheroids for the storage of motor gasoline. Marketing organizations have found that the storing of high test fuels in tanks which will stand a pressure of several pounds per square inch stops all loss of vapor by breathing, prevents lowering of volatility, and guards against reduction of octane rating. They have also found that they can get this kind of protection in large units of capacity and at reasonable cost with Hortonspheroids.

The above aerial view of the harbor at So. Portland, Maine, shows several marketing terminals. There are three Hortonspheroids, one of 6,000-bbl. and two of 50,000-bbl. capacity for 2½ lbs. pressure at the plant in the foregound and one 80,000-bbl. unit for 1½ lbs. pressure at the terminal at the right. Other sizes for handling motor fuel are available in standard capacities ranging up to 100,000-bbl. capacity, or more, and for pressures up to 15 lbs. per sq. in. Where higher pressure is desired, as in handling natural gasoline, standard sizes range from 2,500 to 30,000-bbls. in capacity. Our nearest office will be glad to give you complete information.



Pipe manifold at the Coastal Oil Co. terminal. The pump house is at the left

simple switch in the dispatcher's control room is provided to shut off the power to every pump in the plant.

The concrete dyke walls are 10 feet high, having ample capacity in case of emergency. The walls have been poured in 30-foot sections. Where two sections join, provision is made for expansion of the concrete. Adhering to each section end is a mastic material. These two mastic ends butt up against each other, and a copper strip embedded in each mastic section serves as a means of binding the two sections together.

The terminal design is based on the premise that the most efficient way in which to put through the most gallons per dollar is to handle each product individually and, within reason, mechanically, eliminating wherever possible lost motion by means of control equipment and sectionalizing the plant to prevent contamination and manifolding the sections for flexibility.

The well lighted and ventilated pump house at the Coastal Oil Co. terminal at Port Newark, N. J.

Flexibility is further accomplished by the installation of a variety of sizes of storage tanks, the designers being of the opinion that a greater variety of operations can be performed with a large number of small tanks than with a few large ones.

Consequently, the Coastal Oil Co. marine terminal now has one 80,000-barrel tank, one of 40,000 barrels, two of 20,000 barrels, and two of 10,000 barrels.

Each product handled has its own pipeline to the dock, being manifolded through the pump house. The pump house manifold serves to transfer products from one tank to another, from storage tank to tank car and tank truck, and from tank car to storage tank.

THE piping system is so designed in elevation that the operator may drain the lines to three strategic points about the plant, thus minimizing difficult cleaning operations whenever they become necessary. All pumps are remotely and centrally controlled at the dispatcher's office, which adds to the flexibility of the pumping operations.

The railroad spurs running into the plant will accommodate six cars when the tank car loading rack, now under construction, is completed. Provision is being made for spotting cars in two sections of the siding.

At the dock is ample room for handling large ocean tankers and for several barges at one time. Pumping from the dock to the storage tanks is normally done from the tanker or barge, while pumping from storage to the tankers is done by the terminal pumping units.

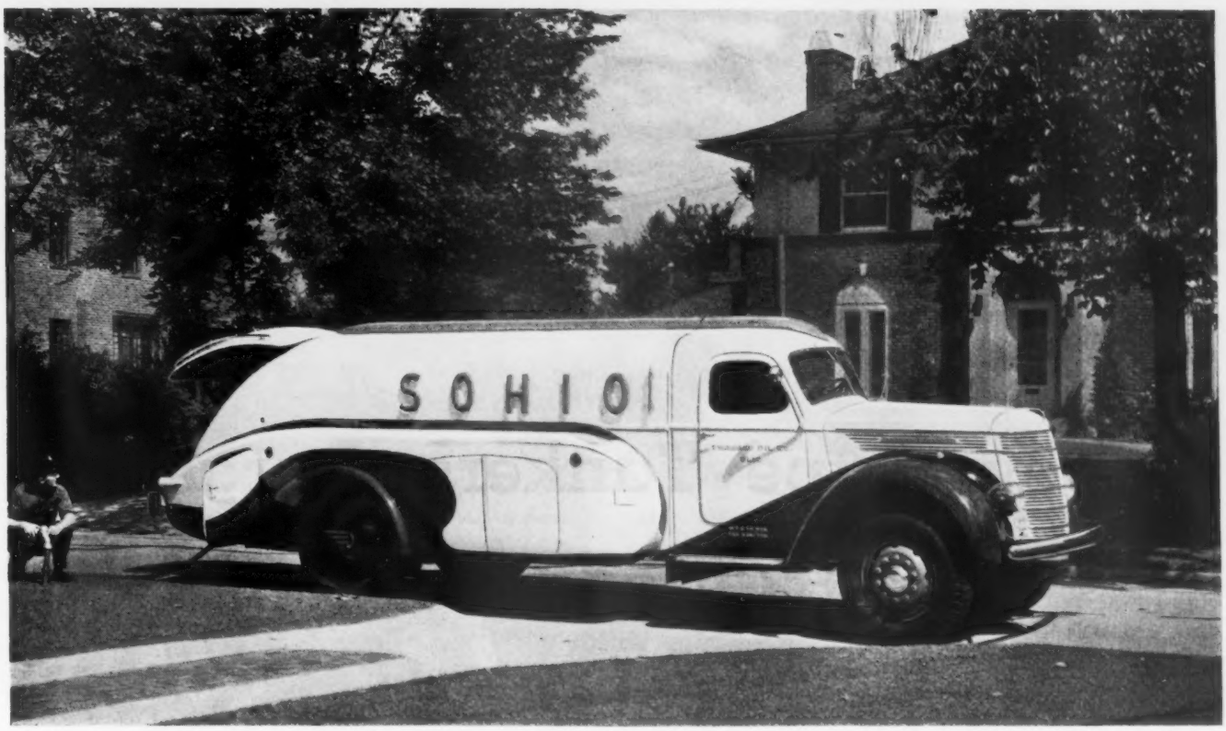
Two 8-inch and two 10-inch pipe lines lead from the dock to the pump house manifold. Laid underground so as not to interfere with street crossings, all depressed piping is coated with a lime-cement-sand mix to prevent corrosion.

Eight-inch lines connect all storage tanks to the manifold, with the exception of the 80,000-barrel tank, which uses a 10-inch line. In the well-lighted and ventilated pump house are three motor driven pumps, with provision made for the early installation of a fourth. Two of the pumps, driven by 30-horsepower motors, are of 1750 and 1050-gallon per minute capacity, while the third, driven by a 20-horsepower motor, has a capacity rating of 700 g.p.m.

From the pump house manifold, two 6-inch and one 8-inch line lead to the truck loading rack, with extensions to the tank car loading rack. The lines leading to the truck rack are underground and enter the lower level of the dispatcher's office where are located the air and moisture eliminators.

From the meters in the dispatcher's office, 3-inch lines lead to the truck bays, terminating in self-closing loading valves and double swing joints.

More Performance Per Truck Dollar
with INTERNATIONAL



International Trucks lend themselves admirably to streamlined treatment of bodies as shown by this 3 to 4-ton Model D-50 owned by Standard Oil of Ohio. This unit is used in the delivery of furnace oil in the residential sections of Toledo.

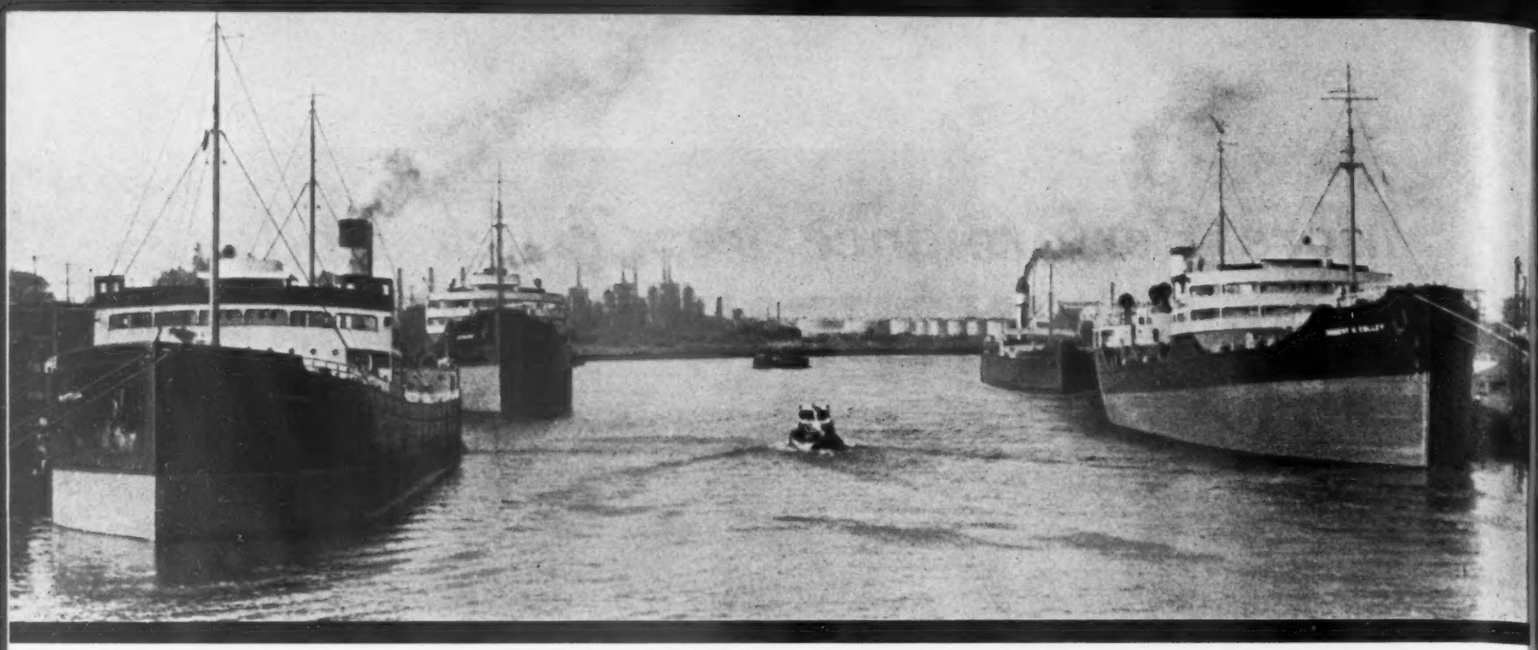
International performance, economy, long life, and after-sale service have won the respect and admiration of truck users everywhere for this great line of trucks. Every year adds another brilliant chapter to the International reputation for giving the greatest possible value in trucks from every standpoint.

Turn your hauling over to Internationals and enjoy all the advantages only these trucks can bring. They are designed and built as *all-truck* for *truck* work. You can see their handsome streamlined appearance on the surface. When you look under the hood and try them out on the road, you will discover the skilled engineering that has gone into them to fit them for work like yours.

See the nearby International dealer or Company-owned branch for complete information and a demonstration. There is a size to meet every hauling need—the line includes 30 models in 99 wheelbase lengths, ranging from Half-Ton units to powerful Six-Wheelers.

INTERNATIONAL HARVESTER COMPANY
180 North Michigan Avenue *(Incorporated)* **Chicago, Illinois**

INTERNATIONAL TRUCKS



20,000,000 gallons of crude oil from Texas Gulf ports. The steamships J. W. Van Dyke, Robert H. Colley, W. D. Anerdson, and Albert Hill, four of the largest vessels of The Atlantic Refining Co. fleet, unload at the company's Point Breeze (Philadelphia) refinery. This record consignment is sufficient to yield the average annual requirements of gasoline of more than 13,000 motorists

New Type Tankers, Barges Speed Oil To Markets

LED bv tanker construction, merchant ship-building today stands unequalled in volume since the war period, representing over 50 per cent more work than during the 1930 peak of construction.

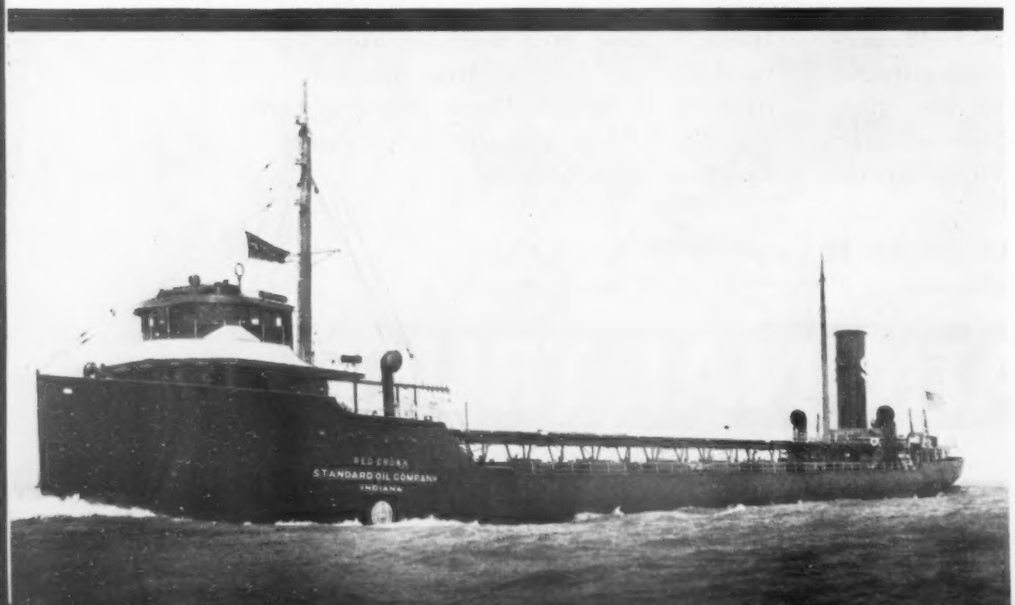
With 24 tankers completed in the past year and 24 more under construction, a rate of production has been established which, if maintained for the next four or five years, would offset deterioration and obsolescence of the 82 per cent of the world tanker fleet of Jan. 1, 1938, which will be 20 years old in 1942.

The new oil tankers present an outstanding claim to distinction, says Robert Morrell in the current issue of Marine Engineering and Shipping Review. The 19 deep-sea tankers range from 425 feet to 521 feet in length. Their designed sea speed varies from 12 knots and the total shaft horsepower is from 3080 in the smallest ships (Gulf type) to 7200 of the Pennsylvania Sun's diesel engine. All these vessels are single-screw.

In speed trials 14 knots have been attained by some vessels and it was reported that the J. W. Van Dyke, designed for 13¼ knots sea speed, made her maiden voyage from Philadelphia to Harbor Island, Texas, at 14 knots. Although a margin of about one knot should be allowed between trial speed and maintained, year-round sea speed, it is apparent that, in spite of the high standard of requirements, the tankers have exceeded them in actual performance, Morrell said.

The new ocean-going tankers have the latest features of hull design which result in reduced wetted surface and frictional resistance. Reduction in residual resistance is also claimed. What is known as the Isherwood bracketless system of hull construction predominates. Tankers built at Sparrows Point for Standard Oil Co. of New Jersey and The Texas Co. have the Bethlehem-Frear system for which a saving in weight for equal strength is claimed, as well as smoother surfaces and offering less surface subject to corrosion and to tank cleaning, and better tank drainage.

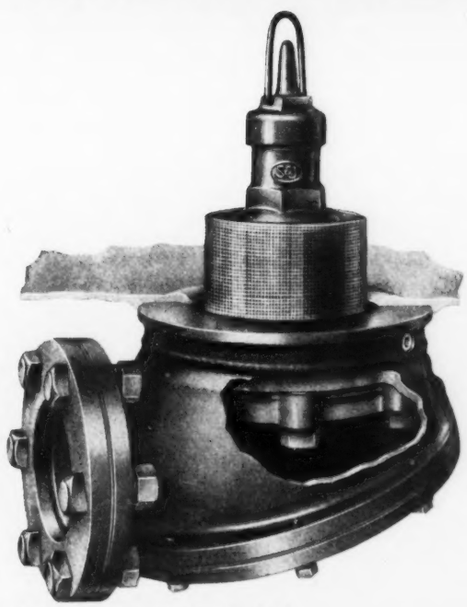
All of the 19 tankers except two Gulf Oil Corp. ships are constructed with the twin arrangement of longitudinal bulkheads, in preference to the



Largest lake tanker is now the Red Crown, put in service last year by Standard Oil Co. of Indiana. The fifth steamer of the Indiana Standard's fleet, she is 465 feet long and carries 2,250,000 gallons of petroleum products

Part of the large fleet of tank trucks built by the Farrell Manufacturing Company of Joliet, Illinois for the Atlantic Refining Company.

THE ATLANTIC REFINING COMPANY USES S&J Internal Valves



Atlantic Trucks employ S. & J. Type TF Internal Safety Valves in a housing which keeps the pipe lines as close to the tank as possible.

As is indicated in the large sign shown in the picture, the watchword of the Atlantic Refining Company and its employees is "BE SAFE". In keeping with this policy each of the trucks in this picture is equipped with S. & J. Hydraulic Safety Valves which protect the public, the load and equipment in the event of accident.

S. & J. Hydraulic Safety Valves are in use everywhere by marketers of petroleum products. They are recognized by fire and insurance authorities as providing the safety necessary to the transportation of inflammable liquids. They comply with the requirements of all state and local ordinances.

For a full description of the S. & J. System, write for our free book, "Transporting Inflammable Liquids with Safety."

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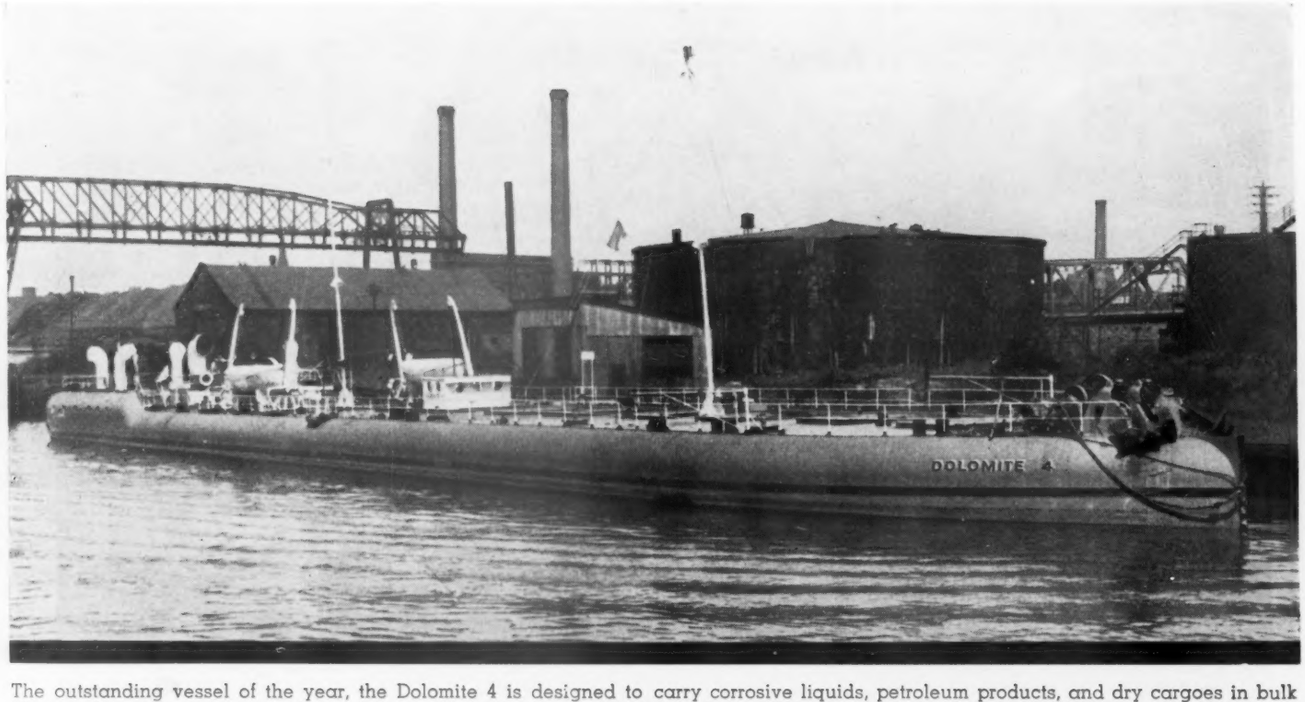


The outstanding vessel of the year, the Dolomite 4 is designed to carry corrosive liquids, petroleum products, and dry cargoes in bulk alternately on the lakes, canals, and coastwise. She has carried kerosine to Chicago and returned east with grain. The Cleveland Press snapped this photograph of her in Cleveland with 1,000,000 gallons of gasoline

system of centerline bulkhead and summer tanks. This design gives greater longitudinal strength with less hull steel weight, although it has certain minor disadvantages, it is said. The twin bulkheads permit cargo tanks as long as 36 or 37 feet, as compared to a former restriction of 28 feet.

All of these big tankers incorporate welding of main strength members in their hull construction to varying degrees, to the greatest extent in the J. W. Van Dyke, Robert H. Collyer, and Pennsylvania Sun, whose hulls are all-welded throughout the oil space.

Facilities for more rapid discharge of cargo have been incorporated, possibly the most rapid being those of the J. W. Van Dyke of the Atlantic Refining Co., which is equipped with motor-driven centrifugal pumps discharging the full cargo of 156,000 barrels in 10.4 hours. The rated capacity of the main cargo pumps is 15,000 barrels per hour. The Rhode Island, with an estimated capacity of 102,000 barrels, is unloaded by turbine driven rotary pumps at 12,000 barrels per hour in 8.5 hours. Other tankers of this capacity unload in 11.5 to 13.5 hours.

Propulsion is divided among geared turbines, turbo-electric, and direct-drive diesel. Boilers of all in the first class are of Foster-Wheeler make having a large margin of steaming capacity and heat-balance has been developed to a high degree of efficiency and economy. The two tankers having turbo-electric drive maintain the highest boiler-pressure and temperature ever adopted in any modern tanker design: 650 pounds per square inch and 835 F. These are Babcock and Wilcox make.

An excellent idea of the proportions of a 400,000 gallon barge and of the deck manifolding on one of Socony-Vacuum's new river barges

THE two diesel tankers have Sun-Doxford engines, that of the Pennsylvania Sun being the largest marine diesel engine ever built in this country, according to Morrell.

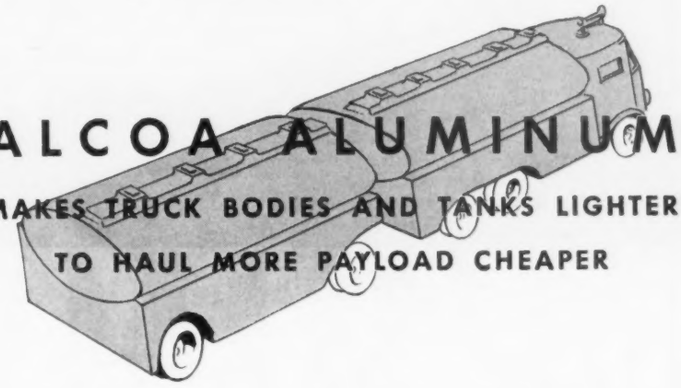
A noteworthy feature of the two diesel tankers is an inert-gas system for smothering. Steam smothering as well as inert gas is used in Tide Water's Associated, a turbo-electric driven vessel. An improved design of oil tank hatches and sight glasses, including permanent tapes for measuring ullages without opening a sight-hole, is another modern feature of new vessels. Still other features are the general use of streamlined rudders, contra-rudders, contra-guide rudders, contra-propellers, etc., modernized accommodations for the crews, and latest types of navigating equipment.

On the Great Lakes no two of the

DO YOUR TRUCKS SHY AT CHECKING STATIONS?

If there had been weight checking stations on the highways of the Mesozoic Era, Dinosaurs would have shied away from them; Dinosaurs had heavy bodies which made them inefficient, led to their extinction. To extinction, also, are going the Truckosaurs of today, trucks with heavy bodies and tanks built of heavy materials. Light bodies, built light and strong from alloys of Alcoa Aluminum, carry more payload, earn more on investment, and also help solve the legal load limit problem.

You can even turn "load limits" and similar highway restrictions to your advantage if you use light bodies and tanks, constructed from the light, strong alloys of Alcoa Aluminum. The extra efficiency gives you a competitive advantage, since it reduces your per-pound hauling cost. Bodies constructed of Alcoa Aluminum carry extra payload and bring extra profit on all types of operation, whether or not legal limits are concerned. Note the special advantages listed at the right.



ALCOA ALUMINUM

MAKES TRUCK BODIES AND TANKS LIGHTER

TO HAUL MORE PAYLOAD CHEAPER

DO YOUR TRUCKS GIVE THESE BONUS LOAD BENEFITS?

STRENGTH AND LIGHTNESS *with* SAFETY results when you build with light, strong alloys of Alcoa Aluminum. The material itself is light, so sections can be made thick, stiff, and strong. We cooperate with tank and body builders to help you get the best results.

LONG LIFE — Often Aluminum tanks and bodies outlast several chassis. Finally, as salvage, they return far more. Reason: higher scrap value.

MAINTENANCE ON THE INSIDE—Aluminum alloys resist corrosion, and also do not catalyze the breakdown of oil products. Flushing-out is less frequently required.

MAINTENANCE ON THE OUTSIDE — Paint holds to Aluminum better, lasts longer, giving more attractive units.

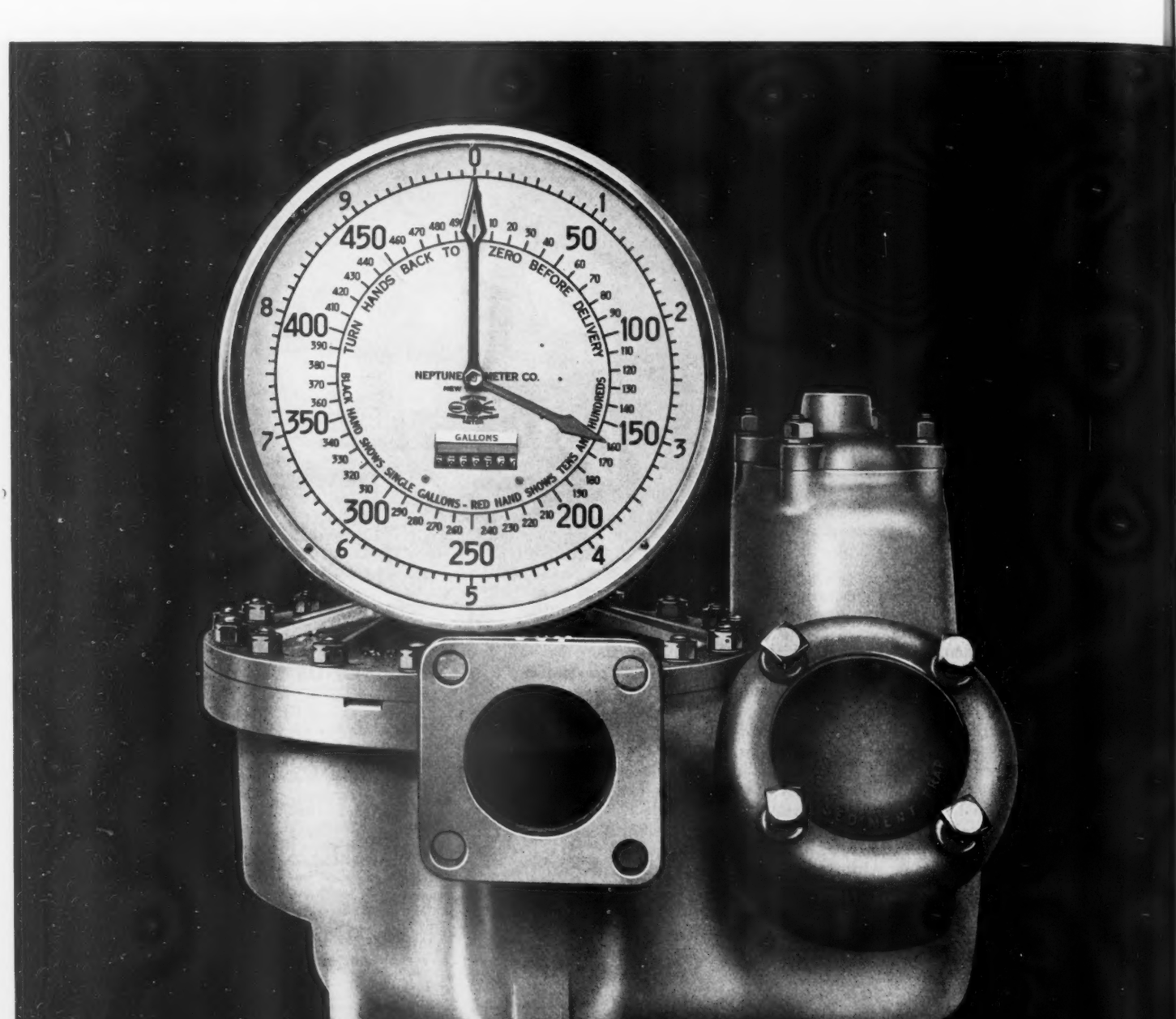
ALUMINUM DOES NOT SPARK WHEN STRUCK.

COST — A per-pound or per-gallon breakdown of hauling cost reveals the reason for using Aluminum. Usually the figures show that extra capacity cuts costs, so the savings pay the extra first cost in less than one year.

SPECIFIC DATA on operating savings has been gathered in case histories of typical users of bodies and tanks constructed from Alcoa Aluminum Alloys. This material and other information on the subject is available to you in the free handbook, "*Alcoa Aluminum for Truck Bodies*," Write to us for it. ALUMINUM COMPANY OF AMERICA, 2190 Gulf Bldg., Pittsburgh, Pa.

NOW, A NEW TANK TRUCK METERING

COMPACT, LIGHTWEIGHT,


TURN HANDS BACK TO ZERO BEFORE DELIVERY
BLACK HAND SHOWS SINGLE GALLONS - RED HAND SHOWS TENS AND HUNDREDS
NEPTUNE METER CO.
GALLONS

3" x 2½" Red Seal COMPACT

THE NEPTUNE RED SEAL

UNIT THAT IS

SPEEDY, STURDY

THIS MEANS "MORE PAY LOADS ON EVERY TRIP"

A number of years ago Neptune realized that in order to make possible the largest income-producing *pay* load, the space occupied by and the fixed weight of the meter and its accessories should be a minimum. So, at the suggestion and with the cooperation of certain oil companies, a Neptune Red Seal Metering Unit,—consisting of a meter, strainer, and air release all combined in a single housing, was designed for truck service. It was installed on some one hundred trucks, and then tested for five years in actual service. During this time this metering unit was continually improved and perfected,—the result of which is the proven Neptune Red Seal COMPACT, offered as the last word in the precision metering of tank truck deliveries.

Note these advantages, of importance in tank truck service:

COMPACTNESS: A Red Seal COMPACT combines in a SINGLE CASING (a) meter, (b) strainer, (c) air release and (d) back pressure valve. Ideal for installation in cramped places where space is at a premium. Makes available valuable space for carrying sealed containers, package goods, etc.

EASY TO INSTALL: Only one inlet connection, one outlet connection and one air connection to hook up, making possible a substantial saving in installation time and labor.

LIGHT WEIGHT: No excess poundage.

SPEEDY: Elimination of the usual large number of angles, pipe bends, and tees means much lower loss of head and much faster delivery.

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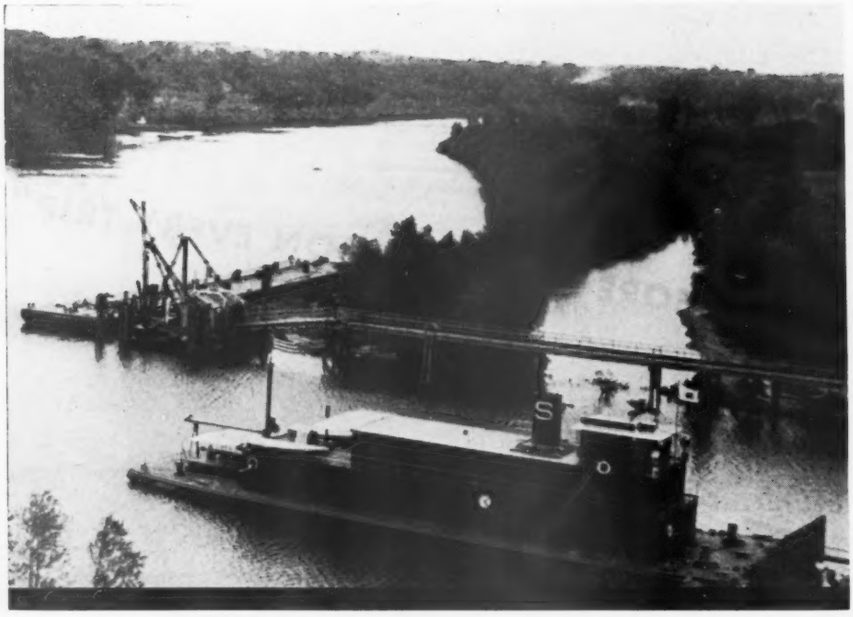


Near the headwaters of the Mississippi river gasoline and fuel oil barges are now a common sight. This floating dock at St. Paul has been ten feet higher at high water last year. The towboat in the foreground is waiting to shift barges, one of which is shown unloading

new tankers are identical in construction as are most deep-sea tankers. The new Red Crown, of the Standard Oil Co. of Indiana, largest tanker on the lakes, 465 feet long; 2,250,000 gallons cargo capacity, is modern in its welded hull, speed of 13½ knots, and living quarters. It is propelled by a triple-expansion engine with Scotch boilers. The cargo pumps are National Transit reciprocating type.

THE motor tanker Traverse City Socony, built at the same yard (Manitowoc), is smaller (1,200,000 gallons cargo capacity) and of conventional tanker design. It has twin-screw drive with two Nordberg diesels. The reversing and control is unique. A single hand lever between the engines has a center position stop, forward position for forward direction, and back position for reverse, the throw being proportional to the speed. Full speed ahead to full speed reverse is possible in four to six seconds, it is said. Cruising speed is 12.5 knots. Two rotary pumps handle cargo at 1500 gallons per minute each. The Mercury, put in service early last year by Cleveland Tankers, is best known for its telescoping pilot house which enables it to pass under low bridges in the canals through which it may be required to pass. This ship is all-welded, 256 feet long overall and carries 925,000 gallons. Two Winton diesels supply propelling power. Speed is 10 knots.

The Paratex of the Gulf Oil Corp. is also designed for canal service as well as lakewise and coastwise service. It is propelled by twin screws by two Alco-Sulzer diesels giving a speed of 10 knots. The cargo pumping system is made flexible with Waterous rotary pumps driven through extended shafts and gearing by auxiliary diesel engines.

What is considered a revolutionary step in tanker construction has been undertaken by the Dolomite Marine Corp., headed by John H. Odenbach of Rochester, N. Y., in fitting out the lakes, canal, and coastal tanker Dolomite IV with nickel-lined cargo tanks. This vessel made its maiden trip from Pittsford, N. Y., to Chicago with 1,000,000 gallons of kerosine, later took a cargo of gasoline from there to Fort William, and took on a cargo of grain for New York City. Caustic soda and corrosive chemicals are expected to be her cargoes on the Atlantic and Gulf coasts when the lake shipping season closes.

Not only is the vessel unusual in internal construction but in external appearance. Its special hull construction is based upon channels fitted girthwise, shaped to the section. Gunwales as well as bilges are rounded to 3-foot radius, giving a whaleback effect. Cargo pumps and piping are also nickel-lined. A turbine-driven, centrifugal pump of 1500 gallons per minute capacity and rotary pump of 1000 gallons per minute handle liquid cargo.

In river transportation a considerable degree of standardization in oil-barge design is said to have been the result of government regulation and consumer requirements. This has enabled Dravo Corp., of Pittsburgh, to build a standard barge for stock. Eight were built this year and by August six were in service. Increased construction of oil barges has enabled refinements of design such as the bow towing knees, which make possible towing of light and loaded barges in the same fleet without danger of over-riding. In addition a 30-inch bilge radius, a 24-foot bow rake and 21-foot stern rake, are design features which tend to decrease towing resistance and provide maximum capacity at a given draft. Frames are longitudinal to prevent side washboarding and consist of serrated angle sections, solidly welded.

The result is that there is no chance for oil or gasoline to accumulate beneath frames and barges may be steamed out thoroughly and rapidly, it is said. These barges have a capacity of 8600 barrels and are 195 x 35 x 9½ feet. Draft is 7.5 feet. Ten compartments with expansion trunks are provided and three of the barges are equipped with National Transit rotary barge pumps of 620 gallons per minute capacity, driven by gasoline engines.

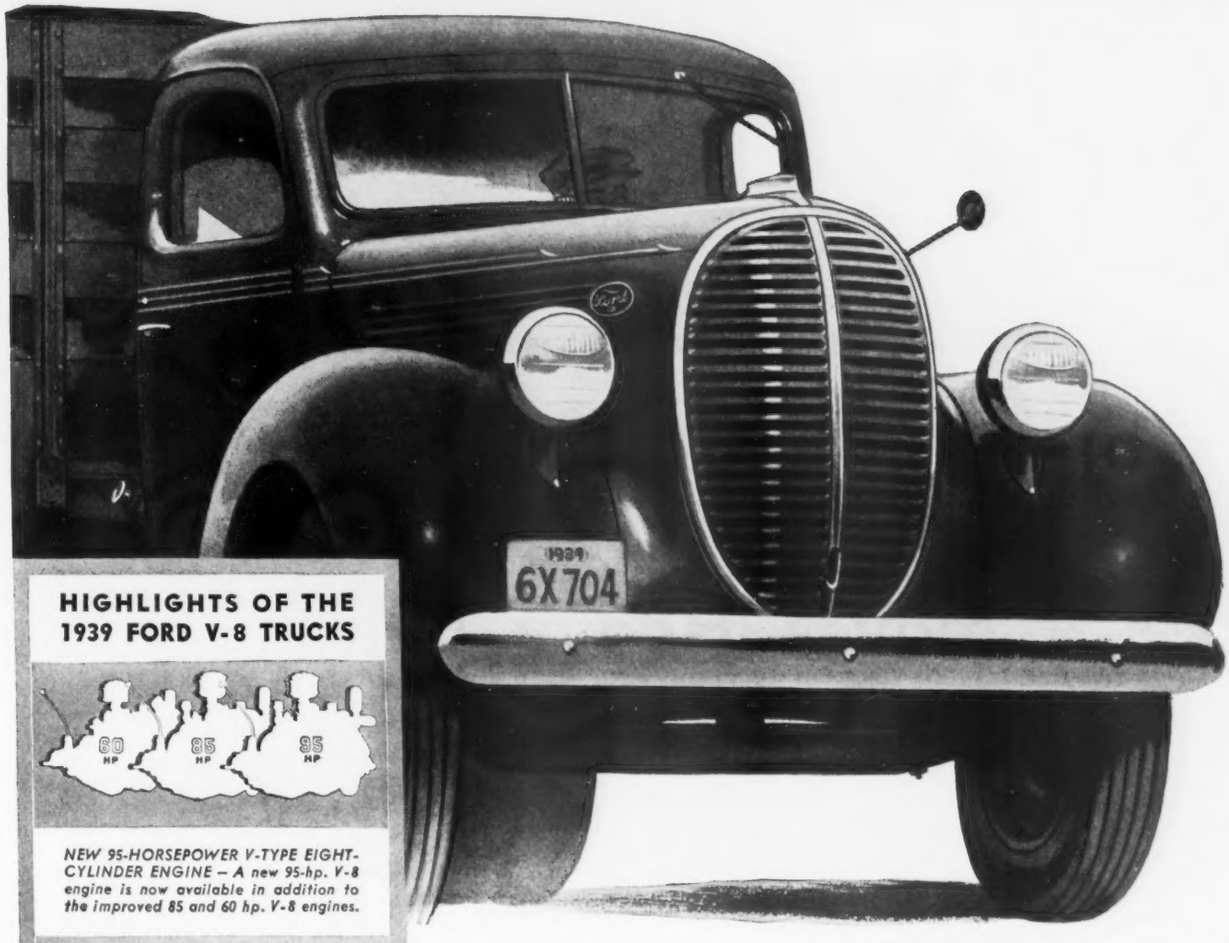
Cargo handling facilities vary considerably with the requirements of the owner. One of the streamlined barges put in service by the Standard of Ohio last year was equipped for handling both gasoline and kerosine simultaneously through a 700 and a 350 g.p.m. pump powered by 70 and 40 hp. diesel engines. If necessary the entire load can be discharged through either pump in case of failure of one. All pumping equipment is exposed on the deck. Built by American Bridge Co., of Pittsburgh, the barge is 145 feet long and 26 feet wide. Draft is 5 feet 10 inches. This barge operates between Midland, Pa., and Cincinnati, a distance of 440 miles, making five trips per month, supplying 13 or 14 river terminals.

WHILE oil barges are used largely for oil only, construction of four barges by Chicago Bridge and Iron Co., of Chicago, last year consists of a lower tank section built of cylinders designed for pressures up to 15 pounds per square inch. The tops of the tank sections are flattened to form, with intermediate floor sections, a level cargo deck with retaining walls. Oil barges had already been built by Bethlehem Steel Corp. in which removable cylindrical tanks are used so that the barge may be used also for coal, sand and gravel, or other solid bulk products by removing the tanks.

While a towboat may not be considered as exclusively an oil industry vessel, it is the impetus of river transportation of petroleum products which has been responsible to a considerable extent for the modern towboats coming into use on the rivers. The stern-wheeled steam engine driven towboat is by no means a thing of the past but diesel engine driven, twin-screws on newly built vessels are no idle threat to this long used mode of locomotion on the inland rivers. Electro-hydraulic rudder control by a simple lever is replacing the spoked steering wheel as on lake and ocean vessels.

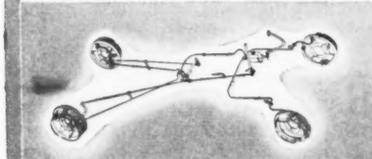
THE TRUCK FOR THE JOBS OF 1939

FORD V-8



HIGHLIGHTS OF THE 1939 FORD V-8 TRUCKS

NEW 95-HORSEPOWER V-TYPE EIGHT-CYLINDER ENGINE – A new 95-hp. V-8 engine is now available in addition to the improved 85 and 60 hp. V-8 engines.



NEW HYDRAULIC BRAKES–Four-wheel hydraulic service brakes, built to Ford standards of safety, are regular equipment on all 1939 Ford Trucks.

- New-type piston rings for improved oil economy.
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THIS YEAR Ford gives economy a new meaning—*over a wider range of truck operations* than ever before.

To the time-proved 85-hp. and 60-hp. V-8 engines is added the *new 95-hp. V-8 engine* for greater power and speed. It is available in the Regular and C. O. E. Trucks. There are *new hydraulic service brakes* for quick, straight-line stops, with easy pedal pressure. Along with these new features are those *time-tested* truck features that have set the high Ford standard of performance and reliability.

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Ten billion miles of payload performance have proved the Ford V-8 engine and the rugged, dependable construction of Ford Truck chassis equal to the toughest jobs.

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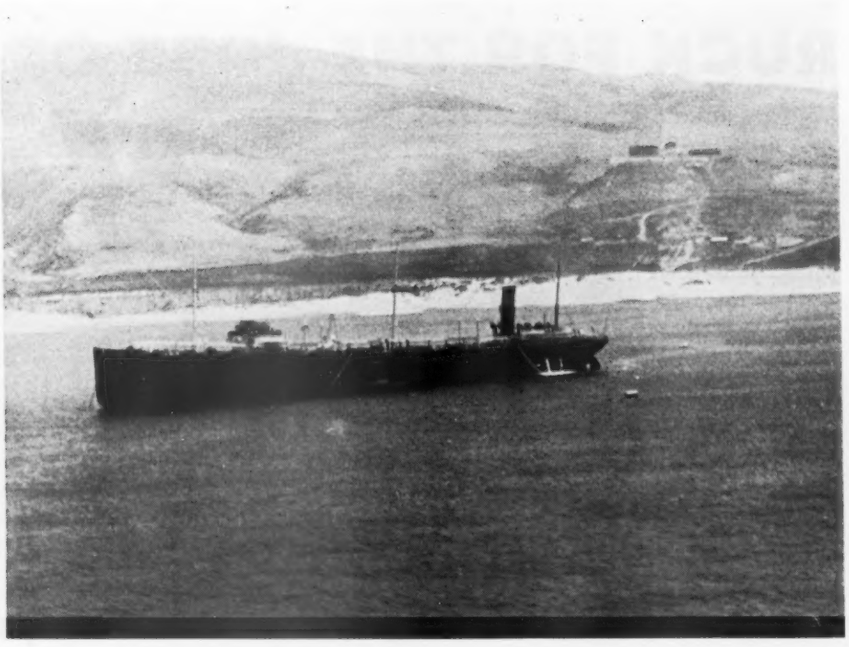

Tanker loading heavy crude off the California coast by means of a submarine pipeline. Storage tanks 400 feet above sea level provide gravity feed for the operation

Submarine Pipeline Moves Heavy Crude

IN SOLVING the problem of getting its production of viscous, high asphalt content crude oil to market, Petrol Corp., independent California company, has made economical use of transport trucks for effecting the haul from field to seaboard and of a submarine pipeline for loading the oil into tankers anchored offshore in deep water.

Petrol has sizable holdings in the Gato Ridge field, about 18 miles south and east of Santa Maria, Calif., and about 34 miles by road from its ocean terminal. The Gato Ridge production yields a crude that is about 14° A.P.I. Gravity, with a viscosity of 4500 S.S.U. at 120°F., contains up to 15 per cent gasoline and has a 70 per cent content of 80 penetration asphalt.

Although definitely out of the bracket of "light refinable crudes," this oil has characteristics which make it particularly suitable for the production of roofing felts, shingles and other products requiring a fluid-type asphalt, and there was good demand for it if it could be brought to tanker-side at a reasonable cost.

In addition to Pacific coast shipments, demand has been built up for this crude among European and Atlantic seaboard buyers. Since completion of its terminal last March, 17 tankers had been loaded with a total of 1,013,088 barrels of the crude, an average of nearly 60,000 barrels per vessel, up to the middle of October. The company's own production at Gato Ridge was recently supplemented by purchases on the open market of a similar oil in the nearby Santa Maria Valley field.

A gathering system and pipeline from the field to seaboard was not considered feasible at present, and the operation was confined to use of truck and trailer assemblies. These transport units are loaded by gravity from a 6-inch pipeline run 700 feet to a loading rack near the highway and several hundred feet lower in elevation than the producing wells. A 125-barrel truck and trailer can be loaded in eight minutes with this arrangement.

At the coast terminal site, the transports are unloaded by gravity into a settling tank and from here the crude is pumped into main storage consisting of one 80,000 and one 65,000-barrel storage tank. Despite the viscosity of this oil, there is no need to heat it on the truck run. A temperature of 110 to 120°F. at the well is sufficient to keep the crude liquid during the short haul.

Petrol uses a submarine line with flexible extension in effecting loading from storage to the tanker offshore, thereby eliminating the need for a long wharf or pier in the exposed shallow water. The character of the crude to be handled prompted a design in these loading facilities which would permit the lines to be cleaned and filled with lighter oil or sea-water after loading, or would permit them to be used in discharging water ballast from the tankers preparing to load.

ESSENTIAL details of the arrangement consist of an 18-inch line from main storage to the shore end of the submarine line, which is made up of two 12-inch, heavily insulated lines, connected at the outlet ends with a "U" bend. This bend is furnished with a flange for connecting to 180 feet of 12-inch submarine hose—the flexible link between the pipeline and loading vessel.

The end of the submarine pipeline is approximately 3300 feet from the shore and is marked by a spar buoy in about 55 feet of water. The flexible hose connection terminates with a 12-inch, worm-operated cock and a 12-inch elbow. This free end is not taken on board ship, but is hooked to the vessel's rail on the starboard side.

Some idea of the size and weight of this hose is shown by instructions

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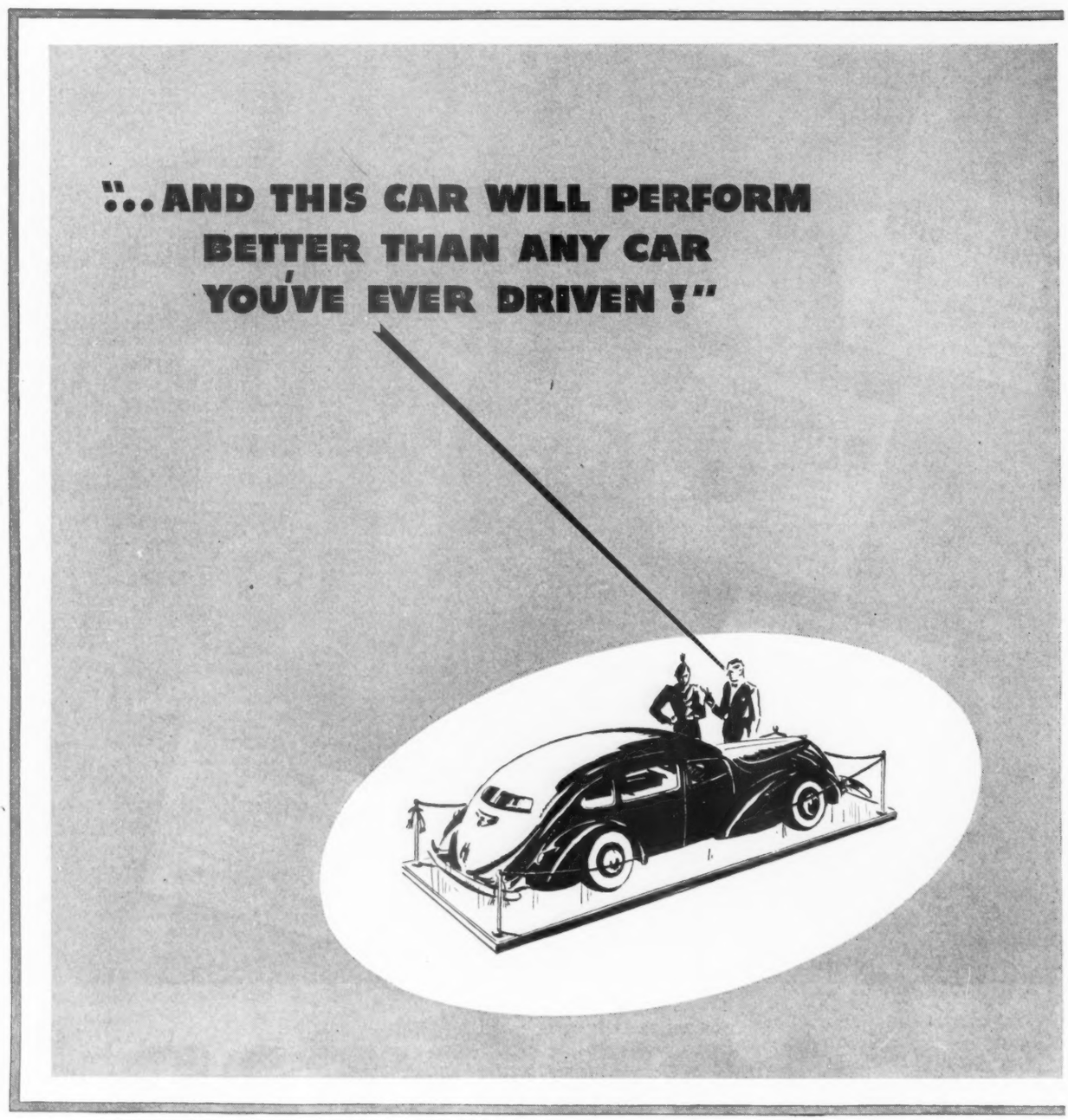

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SOME of your best customers are buying new cars right now. They expect big things from those 1939 models—surging power, flashing acceleration, flexibility they didn't have in their old trade-ins.

The automobile companies have done all they can to make these expectations come true—by improving engines, transmissions, clutches, etc. But, basically, the performance of these new cars is in *your* hands . . . for it depends on the *grade of gasoline* used and the spark setting. Here's how to explain it to your customers:

The farther you advance the spark of a modern high compression car, up to the point of maximum efficiency, the more power you get from gasoline.

But the motor "knocks" or "pings," loses performance, when the spark is set farther ahead than the "anti-knock" quality of the gasoline permits.

Judged by anti-knock quality, there are *three* grades of gasoline: "low grade," "regular" and gasoline containing "Ethyl."

That is why your 1939 car has a device—variously called "distributor adjuster," "Octane Selector," etc., for setting the spark for each of these three grades of gasoline.

And the performance of your car depends on the grade of gas and spark setting:

EVERY MODERN CAR OFFERS THESE 3 CHOICES

Poor performance with "low grade" gasoline

There is no anti-knock fluid (containing tetraethyl lead) in "low grade" gasoline. Power is lost because the spark must be retarded to prevent "knock" or "ping."

Good performance with "regular" gasoline

Most regular gasoline has in it anti-knock fluid (containing tetraethyl lead). The spark can be considerably advanced for more power without "knock" or "ping."

Best performance with gasoline containing "ETHYL"

Gasoline "with ETHYL" is highest in all-round quality. It has *enough* anti-knock fluid (containing tetraethyl lead) so that the spark can be *fully* advanced for maximum power and economy without "knock" or "ping."

anti-knock fluids used by oil companies to improve gasoline

Petrol Corp.'s submarine pipeline, just before it was dragged into the ocean. The loading lines—two 12-inch—terminate 3300 feet offshore by 180 feet of flexible 12-inch submarine hose for effecting contact with the tankship. The center 3-inch line is used to clear the submarine hose of heavy crude, after the loading is complete

issued to skippers of tankers coming in for a load at this terminal. These advise the need of a derrick or boom on the starboard side for use in lifting the hose, and caution that the weight to be handled is approximately 4200 pounds with 20 feet of the hose out of water and approximately 6500 pounds with 40 feet in the clear.

Connection between the free end of this hose and the ship manifold is made by a deck hose, usually carried on the tanker. However, a 10-inch hose, 25 feet long, is provided by the terminal for this purpose and, if necessary, is carried out to the vessel by the mooring master's launch.

A STEEL buoy marks the free end of the submarine hose, which is connected to the buoy with a ¾-inch chain and steel cable for lifting it to ship-side.

Location of the company's main storage tanks on a hill overlooking the bay, at an elevation of about 400 feet, provides gravity flow into the tankers at a rate of nearly 9000 barrels per hour. Loading is facilitated by steam-coil heating the crude to about 150°F. in storage and permitting a temperature of about 120 degrees, delivered at the vessel.

The loading instructions point out that the submarine hose is designed for a working pressure of 200 pounds per square inch and a bursting pressure of about 1000 pounds per square inch. The maximum static head on the hose cock in position at the vessel's rail is 430 feet, equivalent to about 180 pounds per square inch. Caution is advised in seeing that the ship's manifold valve is open before the submarine hose cock is opened, and that the reversal is true when loading is completed. This is to prevent rupture of a possibly weaker deck hose.

It would never do to allow the heavy crude to remain in the delivery lines between tanker loadings, and this fact necessitated careful consideration and design in the layout of this terminal. A system of manifolds and valves is used in displacing the crude in the loading lines with a more tractable fluid after the boat is loaded. The displacing liquid is primarily a light grade of gas oil, or, if the line is to lie idle for some time, it may be filled with salt water.

The gas oil is also used to heat the loading lines, in promoting faster movement of the crude. From a steam-heated storage tank on the hill alongside the main supply reservoirs, the gas oil is circulated through the entire piping system—except for the 180 feet of submarine hose—at an initial temperature of 150 to 160°F. This circulation is carried on for about an hour, and raises the insulated submarine pipe temperature to about 120 degrees.

A feature in the economical operation of this plant is the use of gravity flow, wherever possible, in moving the crude or displacing fluids.

This is exemplified by a description of the terminal in operation. A ship comes in to load and finds all the lines filled with salt water. If the ship has water ballast to discharge, this is pumped through one leg of the double submarine line to a ballast pond on the shore.

AFTER discharging the ballast, the ship waits while hot gas oil forces the salt water into a down-hill storage tank, where it is drawn off. The gas oil is then circulated to raise the pipe temperature—it flows by gravity down through the pipe and is then pumped back to the hill storage.

The hot crude then forces the gas oil out of the loading lines into storage, and, with the closing of valves on the gas oil lead-off lines and the opening of valves on board ship, the loading operation gets under way.

After the loading is complete, the ship stands by while the crude is displaced by the gas oil. Then the gas oil is in turn forced out by sea water pumped into the line from the ship—approximately 1500 barrels is required.

In removing crude from the submarine hose after the loading operation, Petrol engineers ran a 3-inch pipe to the "U" connection at the offshore end of the two 12-inch lines. Valves on the shore end of the 12-inch lines are closed. This forms enough vacuum on the downside to hold liquid in the 12-inch lines while the hose is being emptied. An accompanying photograph illustrates this hook-up.

Edwin W. Pauley, president of the Petrol Corp., said shipments already booked for the first half of 1939 exceed the total volume that will be handled through this terminal during all 1938.

Deep-sea end of the 3300-foot double submarine loading line. Dual piping permits circulation of lighter fluids in displacing heavy crude after the loading operation. The 3-inch line in the center delivers gas oil for cleaning crude out of the submarine hose, which is flanged to the connection on the outer side of the "U"

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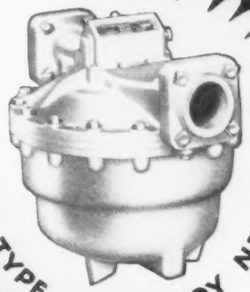

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Governmental Agencies Tighten the Reins on Trucks

By G. T. Kellogg
N. P. N. Staff Writer

GOVERNMENT regulation —and the tendency toward ever-more-stringent regulation—already have made the trucking of petroleum products a business venture hedged about by a multitude of "don'ts" and "musts." Straws in the breeze indicate that even now efforts are under way to make more firm the federal and state rein on the comings and goings of the oil trucker.

Few of the federal regulations issued so far affect the private carrier, that is, the privately-operated truck, such as the transport tank truck used by an oil company for hauling its own products. But provision is made in the basic law covering federal truck regulation, the Motor Carrier Act, 1935, for extension to this field of some of the controls which Interstate Commerce Commission now exercises over only common and contract haulers. Many state laws affect the private carrier the same as the "for hire" trucker, and these, too, would be strengthened if efforts now underway and foreseen are successful.

From the standpoint of possible broadening of federal regulation, it is perhaps enough to point out that the rules for interstate truckers are being administered by the same Interstate Commerce Commission which started out in 1887 as a small government bureau with a mere handful of employes. Today it has spread its control over the railroads of the nation so that a fireman may hardly put an extra lump of coal on his shovel without its permission. From a few small rooms its "home" has steadily grown until today it occupies a palatial 7-floor building in Washington's "Triangle Development" of government buildings, and it now has a total of 2600 employes, about 1100 of whom have been added since passage of the Motor Carrier Act, which brought about establishment of the Motor Carrier Bureau within ICC.

Started as a railroad regulatory agency (though not on the scale on which it now operates) the commission has, in many respects, maintained its railroad-mindedness, as is shown in some of its decisions in motor carrier cases to be cited later.

Backing many of the moves aimed at stricter regulation of trucks are the railroads and their associations.

The oil industry has a "double interest" in trucking—interest in the hauling of its own products as well as an interest from the standpoint of consumption of its products as motor fuel and lubricants by all trucks—which makes any threatened tightening of government control over haulers of merchandise, or farm products, or any commodity, of almost as much concern to oil as extension of regulation to the industry's own trucks.

The controversy which passage of the Motor Carrier Act opened up over the line of demarcation between federal and state control will, in all probability, continue for many years, and while it continues, the trucker is caught "in between"—if he doesn't have to serve one master he must serve the other, and in many instances, both.

A picture of the present situation with regard to regulation of trucking leaves one with the feeling that at every turn in the road the trucker must stop, fill out a government form or two, undergo an inspection, check his cargo, or—and this is not intended to be funny—take a nap in his "sleeper cab."

All this, of course, after he has complied, before starting operation, with state and federal registration and certification laws, made certain his truck would come within size and weight limits of all states through which he planned to operate, hired competent and healthy truck drivers, and a dozen other preliminaries.

The Motor Carrier Act declares it is the policy of the national Congress to "regulate transportation by motor carriers in such a manner as to recognize and preserve the inherent advantages of, and foster sound economic conditions in, such transportation and among such carriers in the public interest."

To effectuate this policy, the law requires that all "common carrier"

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NEBRASKA TRUCKS HAUL 48% OF PETROLEUM PRODUCTS

LINCOLN, Nebr.—Transport trucks are hauling an increasingly-large percentage of petroleum products shipped into Nebraska, according to statistics compiled by C. M. Sutherland & Sons, Lincoln, who operate a service bureau for petroleum transporters. While rail inshipments have steadily declined, both in volume and in percentage of the total, the truck's share has climbed from 29.7 per cent in 1935 to 48.4 per cent for the first eight months of 1938, as shown by Sutherland's figures.

Nebraska Inshipments of Petroleum Products

Carrier	1935	1936	1937	1938 (Jan.-Aug.)
		(Thousands of Gallons)		
Truck	92,395	128,430	149,590	117,186
Per cent of total	29.7%	38.9%	43.5%	48.4%
Railroad	167,665	155,119	143,815	89,205
Per cent of total	53.8%	47%	41.8%	36.8%
*Great Lakes Pipe Line	51,237	46,665	50,249	35,868
Per cent of total	16.5%	14.1%	14.7%	14.8%
Total All Carriers	311,392	330,214	343,654	242,259

*Delivers to tank cars only for ultimate destination.

truckers must get from ICC a "certificate of public convenience and necessity." A common carrier, the law says, is anyone who undertakes to perform transportation for the public generally for compensation. The common carrier of petroleum products is, of course, one who holds himself out to truck the products for any and all oil companies, or consumers, who seek his services.

To get this certificate, the trucker must make a showing that the operation he proposes is a matter of public convenience and necessity, except that truckers operating prior to June 1, 1935, are not required to make such a showing.

CONTRACT carrier truckers, the law requires, must have permits from the commission, such permits to be granted or denied on questions of whether the applicants are "fit, willing and able" to conduct the proposed operation, and whether the operation, in the commission's opinion, is "consistent with the public interest" and the policy of Congress. Lack of one or both of these two requirements has already resulted in denial of many hundreds of applications. The "grandfather clause," referred to above, permits truckers operating prior to July 1, 1935, to get permits without a showing.

A contract carrier, the Act says, is one who transports property in interstate commerce for compensation under special and individual contracts with his customers.

The Act has been in force now three years and three months (it was signed by the President Aug. 9, 1935), and in that time about 93,000 applications have been received for certificates or permits. Less than a third of these have as yet received consideration, largely because of physical inability of the Motor Carrier Bureau to handle the volume of work which the certification and permit requirements dumped in its lap. About 21,000 permits and certificates have been granted; the rest await action.

No figures are available as to the number of common and contract oil truckers represented in these totals. In the eight volumes of Motor Carrier Cases published so far by ICC, about 7.5 per cent of the carriers whose applications have been ruled on are haulers of petroleum products. Application of this figure to the 93,000 applications on file would give an estimate of around 6,900. Similarly it would indicate that about 1,600 petroleum truckers have so far received certificates or permits. These are, of course, only estimates. They represent, also, only operators who cross state lines, some of whom may have but one tank truck, others, fleets up to 100 or more vehicles.

Two other important elements of federal control over common and contract truckers are the requirement for filing of tariffs with ICC by the former, and of contracts, showing charges, by the latter. The contract requirement became effective Oct. 24, but prior to this contract carriers were required to file charges.

The commission may suspend schedules of rates and charges filed by either classification, and investigate into their conformity with the "public interest," and their reasonableness and lawfulness. Charges must, the commission holds, be reasonably compensatory to the carrier, and there must be no rebates or discounts from the rates on file.

The Act also gives the commission authority to establish rates, as well as maxima and minima for rates over given lines or within certain areas. So far only a few minimum rate orders for specific areas have been issued, and petroleum rates have been exempted in these, largely, it was pointed out, because there was no complaint about the existing petroleum rates in the areas covered by the orders. It was said at the commission that petroleum haulers would probably also be exempted from the similar rate cases now under consideration.

Besides this control over the rates of carriers, the commission rules on whether a trucker may acquire the business of another trucker, or whether they may consolidate their operations as one company. Also, the regulatory agency may, and does, rule on applications of trucking corporations to issue securities. This applies only to corporations whose outstanding securities are valued at over $500,000, par.

Under the title "Security for the Protection of the Public," the Motor Carrier Act provides that no permit or certificate will be issued, or allowed to remain in force, if the trucker has not made a showing to the commission either that he has adequate insurance or is financially able to act as a "self insurer."

The act prohibits "dual operation," that is, operation as a contract carrier and at the same time soliciting business from the general public as a common carrier, unless special permission is given by the ICC.

Another form of operation which the commission must approve is that of a "broker" of transportation by motor vehicle, also on the basis of public interest and fitness, willingness and ability.

Common carriers must, like railways, issue receipts, or bills of lading, for goods transported, and be liable to the owner for loss or damage.

But the regulations quoted above are only a start on the limits which the ICC has placed on common and contract truckers. And the discretionary powers which it was given by the Motor Carrier Act—but has not yet acted upon—are as numerous again.

REGULATIONS so far enumerated deal largely with "getting started" in the trucking business. Once the common or contract carrier has received the ICC blessing on his venture, he must keep his accounts and records as the commission prescribes, and send in periodic reports as requested by the regulatory body. As yet, not many types of reports have been requested of truckers, as the commission is still floundering through the mass of applications for permits and certificates.

There are, as yet, few tonnage figures, no breakdown of commodities carried by truck, available at the commission. Recently, however, it ordered all Class I truckers (whose annual business is above $100,000) to submit quarterly reports as to tonnage moved, but no breakdown of commodities has been ordered yet.

Discretionary powers delegated to the commission under this section (220) of the Motor Carrier Act are vast, and it could require all sorts of reports, account forms, and records—and, of course, books of common and contract truckers are to be open at all times to Commission representatives.

"The commission may, in its discretion, prescribe the forms of any and all accounts, records and memoranda to be kept by motor carriers, and the length of time such accounts, records and memoranda shall be preserved, including the accounts, records and memoranda of the movement of traffic, as well as of the receipts and expenditures of money," the section reads, in part.

The act further requires that every common or contract carrier must file

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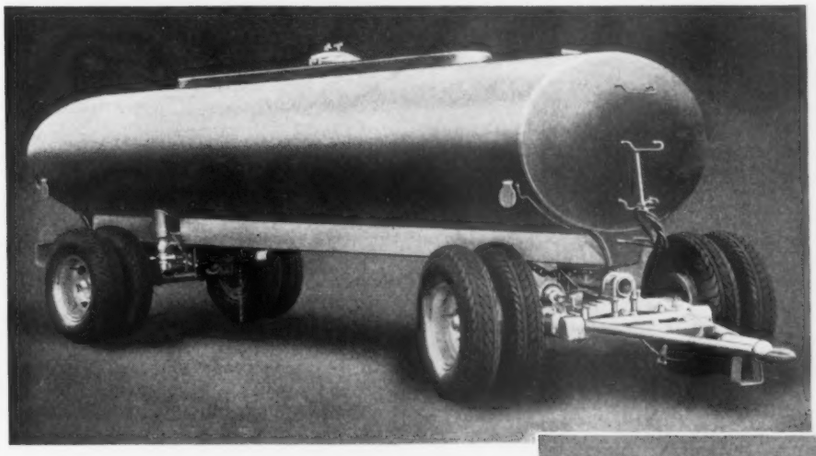

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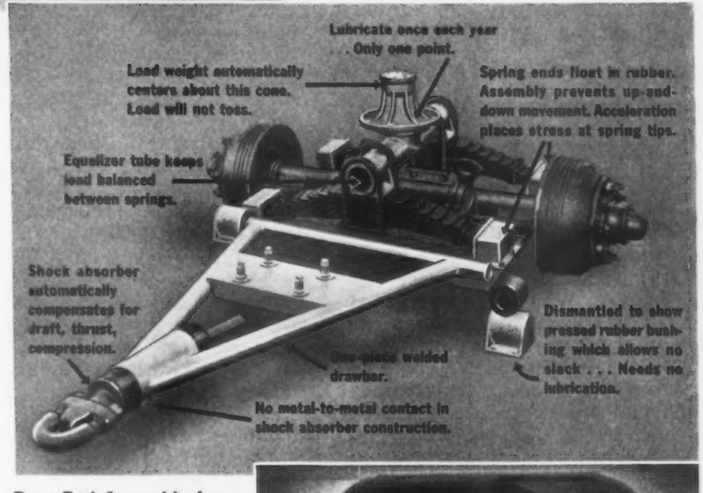
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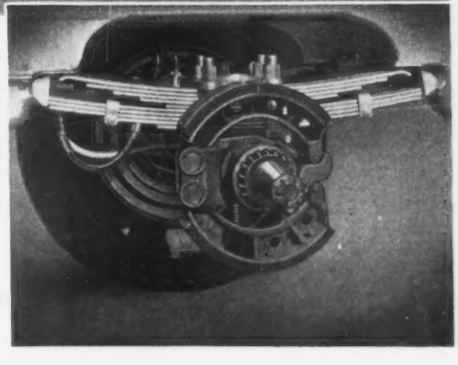

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with the state regulatory commission in every state in which it operates, as well as with the ICC, the name of some person on whom the regulatory agencies may file notices, orders or other papers.

But there is another "all inclusive" section, under which the commission may "establish reasonable requirements with respect to . . . qualifications and maximum hours of service of employes, and safety of operation and equipment."

UNDER this authority the ICC has already issued an order setting up four sections of its "safety regulations" affecting common and contract carriers. The regulations established so far concern:

1. Qualifications of Drivers.
2. Rules for Driving.
3. Parts and Accessories Necessary for Safe Operation.
4. Reporting of Accidents.

The fifth, sixth and seventh parts of the safety regulations are under consideration now. When completed they will be the requirements for hours of service for truck operators; the regulations for the handling of dangerous articles, and the rules covering inspection and maintenance of equipment.

The hours of service regulations were issued this summer by ICC, after hearings, and were to have become effective Oct. 1, but the date was postponed. They provided, among many other things, for a maximum workday of 10 hours for drivers, and for use of sleeper cabs on operations in which the driver must get the required 8 hours off duty at a point or points where facilities are not available. The regulations also provided for the keeping of a log by the drivers, showing time on duty, time off duty, stops, rests, and other data on the trip.

Where the "boss" of a company operates the truck himself, the rules apply to him the same as to an employed driver.

Postponement of the effective date of these regulations came after oilfield haulers' groups, and others, had protested to the ICC as to their applicability to special classes of truckers. A hearing was scheduled to be held in Chicago Nov. 4, following the American Trucking Associations' convention at Detroit, where testimony was to be presented by the protesting groups. A decision by the commission is expected before the new effective date, Dec. 31.

The oilfield haulers maintain that compliance with the hours of service rules would drive them out of business, pointing out that ordinarily their trucks are loaded only one way, that they provide irregular service over irregular routes, and that the cost of "spotting" extra drivers at various points to take the load on towards its destination after one driver had finished his 10 hours would be prohibitive, and would be reflected in increased rates and charges.

Also, they say, their loads are usually extremely heavy, and it is often "necessary and advisable" to stop very often to cool tires and motors, thereby creating rest periods which enable drivers to work longer then the arbitrary 10 hours.

As for "sleeper cabs" for long-distance hauls, the oil field haulers point out that the pipe which they often haul is 30, 33 and sometimes 40 feet in length. State overall-length laws will not permit a vehicle long enough to haul this pipe and still be equipped with a sleeper cab, it is said.

The necessity for speed of operation also was brought out by the oilfield haulers, who contended that the ICC limitations would slow them up in getting to points in the oilfields where they were needed without any delay.

But, even as special groups within the common and contract carrier classifications were battling for exemption, or at least special consideration under the "hours of service" rules, attaches of Interstate Commerce Commission revealed that some representatives of private trucking were seeking inclusion under the regulations.

The reason, it was pointed out, lies in the new Wage-Hour Act. This Act exempts from its 44-hours per week provision "any employe with respect to whom the Interstate Commerce Commission has power to establish qualifications and maximum hours of service . . ." The ICC hours of service regulations permit a work-week of 60 hours (or 70 hours out of 192, for seven-day operators), as against the 44 hour work-week of the Wage-Hour Act (diminishing in the next three years to 40 hours).

It is argued by some that the mere "power" given ICC by the Motor Carrier Act to inquire into the need for such regulation for private carriers, and to provide them "if the need be found," constitutes the power necessary to exempt drivers of private trucks from the Wage-Hour provisions. But nonetheless, it is said, the private carriers who have talked to the commission about it had rather have it down in black-and-white that they *are* subject to ICC regulation in the matter of hours. It is not known whether this is the attitude of all, or even of a sizeable share of companies operating private trucks.

AFTER more than a year of drafting tentative regulations for truckers of explosives and dangerous articles, sending them out to interested industries to be discussed, and redrafting, the rules were whipped into final form this summer. Two hearings were held last month on them at Los Angeles and Tulsa. A third hearing is scheduled in Washington Nov. 21. They will not become effective until sometime later.

These last, the explosives and dangerous articles regulations, cover the trucking of most petroleum products—the lighter ones, at least,—as well as certain chemicals, gunpowder, dynamite, and similar explosive commodities. They provide strict rules for the gauge of tanks used in carrying gasoline and other petroleum products, and specify valves and other equipment in detail.

The inflammables and explosives regulations are unique in that in going into them the Interstate Commerce Commission has taken one of its few steps toward federal regulation of private carriers.

The Motor Carrier Act provides that it shall be the commission's duty "to establish for private carriers of property by motor vehicle, *if need therefor is found* (Italics supplied), reasonable requirements to promote safety of operation, and to that end prescribe qualifications and maximum hours of service of employe, and standards of equipment."

Hence, in addition to the certainty that the rules, in whatever form finally drafted, will be applicable to common and contract truckers of petro-

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leum products, the commission's *ex parte* case is, for purposes of the record, going into "the need for establishment, and if need therefor is found, the establishment" of the same regulations for private-operated trucks hauling gasoline.

This would include all the company-operated tank trucks operating in interstate commerce—and it is felt virtually certain that the "need" will be found, at least as regards for-hire truckers.

Anticipating this, the American Petroleum Institute and other interested organizations within the industry sought to have ICC drop the reference to private carriers from the order, so that the regulations for oil-company tank trucks could be taken up at the same time when other features of the safety program, as applied to private carriers generally, were taken up.

This would, they argued, simplify matters for the oil industry and preclude the necessity for their appearance at hearings sandwiched in between common and contract truckers, as well as for a second appearance when the private carriers safety rules generally are taken up. But the petition was denied. However, it is pointed out, the A. P. I. requirements for truck tanks and other equipment used by company-owned tank truckers are, in most cases, more stringent than the proposed ICC regulations.

OTHER private-carrier groups point out that their inclusion in the same class with for-hire truckers in this one case might prove the opening of the door through which the ICC could step in even further regulation of private carriers. They maintain ICC should stay strictly within the powers given them over "safety" regulations for the oil company truck and other company-owned trucks.

The broad discretionary powers given ICC by the Motor Carrier Act over "qualifications and maximum hours of service of employes and standards of equipment" if the need for such regulation of private carrier is found, could result in application of all the above seven classifications of safety requirements being made applicable to the oil company truck, as they are now (or soon will be) applicable to the common and contract carrier of petroleum products.

ICC has initiated an *ex parte* investigation into the matter of "the need for" establishing safety regulations for private carriers, and only last week scheduled hearings on them during January and February at nine cities throughout the country. The hearings scheduled are as follows:

Jan. 9, Washington; Jan. 12, New York; Jan. 16, Chicago; Jan. 19, Minneapolis; Jan. 23, Spokane; Jan. 25, Portland, Ore.; Jan. 30, Los Angeles; Feb. 3, Omaha, and Feb. 6, Memphis.

It is in this investigation that the A. P. I. and other industry representatives sought to have the "explosives" regulations, as applied to private carriers, included.

Another *ex parte* investigation pointing to increased federal regulation—but in this case regulation which a great many interstate truckers would welcome—is that now under way in the matter of size and weight restrictions for trucks.

Gasoline Trucking Gains In California

LOS ANGELES—Total volume of gasoline transported by truck in California during 1937 was 514,869,147 gallons as compared with 494,616,752 gallons in 1936, an increase of 4.09 per cent, according to testimony at a recent Interstate Commerce Commission hearing here. Gasoline hauled by the railroads in 1937 amounted to 156,647,585 gallons, a drop of 12.85 per cent from the 176,280,882 gallons shipped by rail in 1936.

Every state in the Union has some sort of truck size-and-weight limitations—nearly all different. Through skillful maneuvering in state legislatures and with state regulatory bodies, opponents of interstate truck operations — often the railroads — have managed to have these restrictions made ridiculously low—so low that, enacted in states over whose roads a substantial interstate truck freight movement might otherwise be carried, they serve to cut the potential truck movement to a mere trickle.

South Carolina had such a law until last winter. It permitted a maximum weight of 20,000 pounds, and a maximum width of 90 inches. It was able to bar from the highways much of the truck movement from South Carolina's seaports to inland cities in adjoining states. Much of this movement was in petroleum products, and much more would have been but for the restrictive law, South Carolinians say.

With passage of the Motor Carrier Act, which gave the ICC authority to inquire into the need for federal regulation of weights and sizes of trucks, a suit was started in South Carolina to enjoin state officials from enforcing the 20,000-pound law. A three judge statutory federal court upheld the contention of the truckers, headed by American Trucking Associations, that such a law was a bar to interstate commerce, and hence unconstitutional.

The state appealed to the U. S. Supreme Court, which considered arguments of the truckers, as well as a brief by the ICC contending that the Motor Carrier Act superseded any state regulation of size and weight as it affected interstate trucking.

But the highest court upheld the state, asserting that while the ICC was given the power to regulate size and weight of interstate trucks, it had not exercised this power, and in the absence of such exercise, the state was not going outside of the Constitution in regulating trucks which used its highways.

Such an interpretation spurred the organized truckers to ask ICC to "hurry up" and get its federal size-and-weight regulations operative. The commission is now working toward this end. It is studying the size-and-weight restrictions of all the states, asking the reasons for their enactment, and within the next few months is expected to issue a digest and discussion of the laws, and of a proposed federal regulation. This will be sent out for comment to truckers over the entire country, and some time later hearings will be scheduled.

But, while truckers are battling for these federal regulations, which, they believe, because of the "rule of reason" which ICC usually follows, will be more liberal than some of the state restrictions, the railroads are battling equally hard to forestall them, or at least to make the federal limits as restrictive as possible.

And, again, there is no guarantee that the Supreme Court will rule that state restrictions are out the window even when ICC's regulations become effective. Its attitude in the case described above (*South Carolina v. Barnwell Bros.*) was that the individual states know the strength of their own highways, and "The conditions under which highways must be built in the several states, their construction and the demands made upon them, are not uniform."

SO, until a new case comes up to test the ICC's size-and-weight regulations as applied to interstate trucks, the question will go unsettled as to whether the oil trucker's (or any trucker's) master in the matter of sizes and weights is the state or the federal government. For the time being, his masters are the states through which he operates in this respect.

Needless to say, the federal size and weight restrictions, when promulgated, under the Motor Carrier Act will apply to private trucks in interstate commerce, as well as common and contract carriers, as is now the case with the state regulations.

As for South Carolina, to combat the intensive efforts of the railroad lobby, the state's farmers, petroleum companies and truckers, and highway haulers of many other commodities last winter joined hands to bring about passage of a new law which makes the maximum weight limit 40,000 pounds, and the maximum width 96 inches. Besides the organized efforts in every town and city in the state, and the personal "buttonholing" of every state legislator by citizens of his own county in behalf of the new bill, a "march on the capitol" was staged in Columbia by more than 5,000 truckers and truck users. It was shortly after this that the new law passed.

However, one member of the legislature, a railroad employe in private life, filibustered for more than a day and a night before allowing a vote on the bill. Even in their moment of victory, the truck-adherents were thrown for a slight loss, because rail-minded legislators were able to include in the new law a performance factor requir-

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ing that trucks must be able to make at least 20 miles per hour, loaded, up a 5 per cent grade. While no official assurance has been given, it is understood that the state highway department has not, and will not, bear down on this requirement. But it is there—and many other states have the same or similar performance requirements.

Now, let us turn from the dozens of federal regulatory restrictions placed on the trucker to the hundreds of state regulations with which he must comply. The federal regulations, of course, apply only to trucks crossing state lines; but the state regulations apply to all truckers—interstate and intrastate—except where specific federal regulations under the Motor Carrier Act supersede them.

THE extent of this "zone of influence" of the federal regulations, how far it supersedes state regulation, creates quite a problem for the interstate oil trucker, as indicated in the opening paragraphs of this article, and again in discussion of the case of *South Carolina v. Barnwell Bros.*

There is another case, now pending before the Supreme Court of the United States, decision of which will go far, it is hoped by truckers, toward settlement of this controversy.

For several years prior to the "grandfather date," June 1, 1935, A. E. McDonald, a Texas trucker, operated a trucking service in Texas and Oklahoma. In January, 1936, his trucks were halted in Texas, and his shipments delayed, because he did not hold a state-issued "interstate certificate of convenience and necessity" as required by a state law passed in 1931. He had, however, complied with the Motor Carrier Act's provisions covering a federal certificate.

The state held it had denied McDonald the state permit (for interstate operation) because "highways over which complainant (McDonald) sought to operate are not in such condition as to justify the issuance of any permit to him, and that said highways are now so congested that his operation would unreasonably interfere with the uses thereof by the traveling public."

It is the Texas Railroad Commission, headed by Col. E. O. Thompson, which is carrying on this battle against the ICC's authority.

McDonald applied to the U. S. District court for injunctive relief, pointing out that he had complied with all "applicable" laws of the state of Texas, but that the Motor Carrier Act's requirement of certificates superseded that portion of the state law.

He was sustained by the District Court, but the Fifth Circuit Court of Appeals reversed the decision on the ground that the federal act merely prohibits carriers from operating in interstate commerce without ICC authority, and does not entitle recipients of such authority to use the various highways of the state.

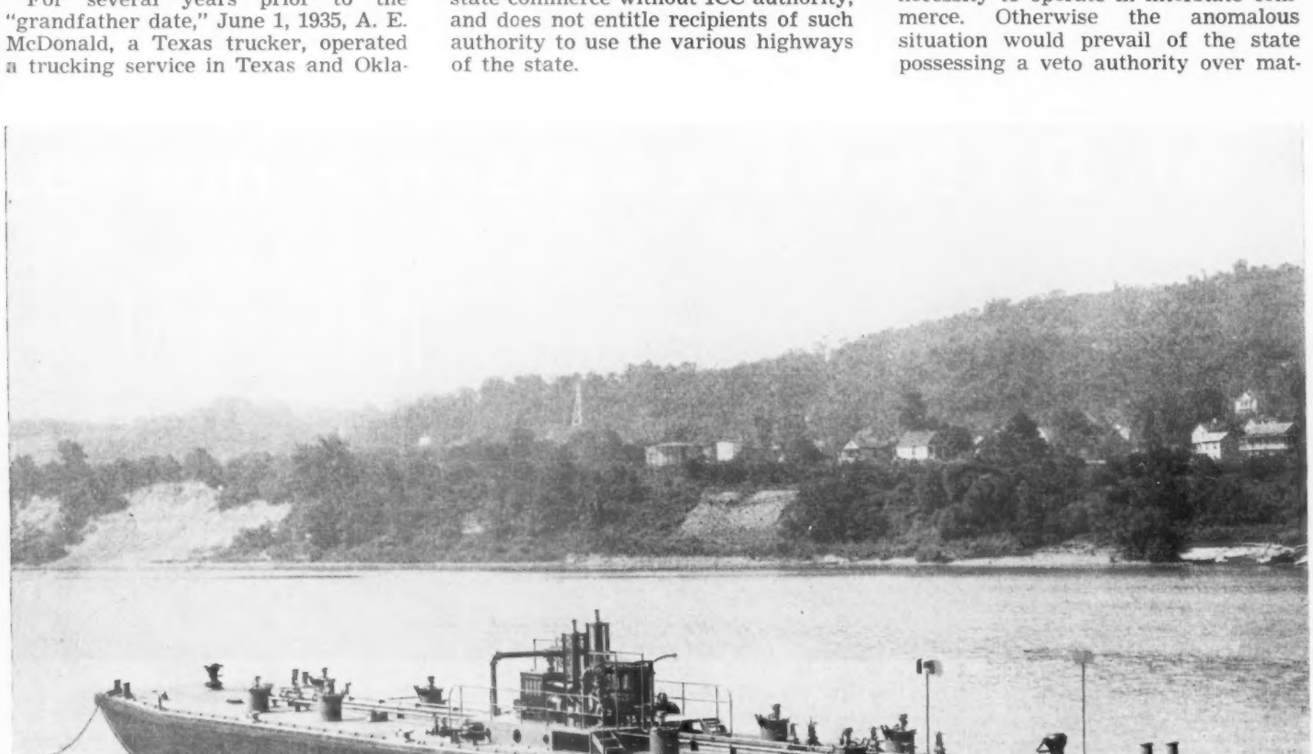
Interstate Commerce Commission, its authority challenged, has petitioned the Supreme Court for review, contending that the federal act excludes state power of regulation in the matter of certificates of public convenience and necessity in interstate commerce.

In its brief, the ICC cites many of the points it has included in its decisions granting truckers' authority to operate, among them the fact that Congress passed the Motor Carrier Act chiefly to "preserve the inherent advantages of motor transportation."

"Local variations in laws and regulations, however commendable their purposes," ICC's brief argues, "will have the necessary effect of destroying the advantages of motor transportation which it is the declared purpose of Congress to protect.

"It is apparent that state power of control, even in a negative manner, that is, by denying certificate . . . . is in direct conflict with the expressed purposes of the Motor Carrier Act . . .

"It seems apparent, therefore, that under the Commerce Clause (of the constitution), the authority of the Interstate Commerce Commission is paramount to any exercise by a state over interstate commerce, especially in a matter as closely related thereto as certificates of public convenience and necessity to operate in interstate commerce. Otherwise the anomalous situation would prevail of the state possessing a veto authority over mat-



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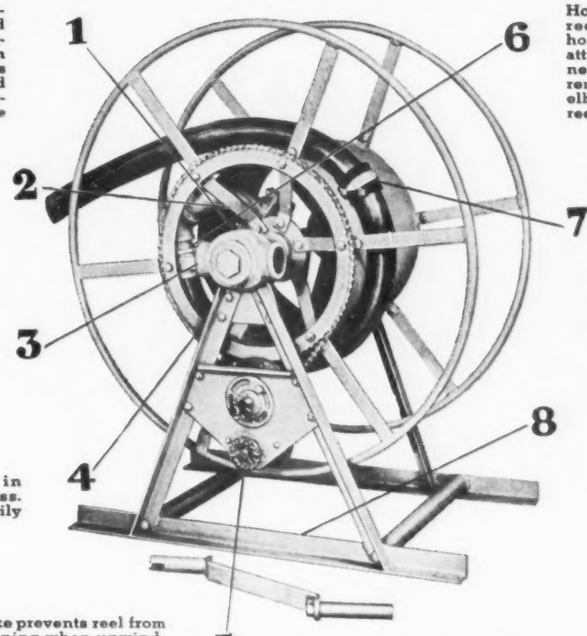

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ters granted to the federal government under the constitution."

It is the fear of truckers generally that if Texas' denial of a certificate on the basis of "traffic conditions" is upheld as superior to ICC's certification powers, other states will resort to equally vague but all-inclusive "reasons" for forestalling operation of the Motor Carrier Act.

The ICC has no quarrel with the requirement by states that purely intrastate operators must have state certificates, but cites decisions by the Supreme Court that "there can be no divided authority over interstate commerce."

Spokesmen for for-hire truckers generally (only common carriers are required to have certificates of public convenience and necessity, and for the most part they prefer federal to state regulation, for reasons already discussed), hold that unless the decision of the Circuit Court is reversed, there is grave danger that it will be followed by other tribunals, with the result that state commissions will be left free to "seriously interfere with and impede" the ICC in performance of its duties under the Act.

IF the highest court doesn't reverse the decision, it is feared that other state legislatures may be persuaded to set up other laws and regulations and attempt to make them "stand up" against the federal law as applicable to interstate as well as intrastate trucks on this precedent.

On the other hand, private truckers fear that too much broadening of ICC regulations to include them — and among them oil-company trucks—may also result in drafting of state regulations which might go a "step further", as extension of federal regulation has so often in the past resulted in even more stringent state regulation.

Chief concern of the oil industry in such an eventuality, of course, is that many of its thousands of company-operated trucks are tank-wagons, delivering petroleum products wholly within a state. While federal regulation of interstate private carriers will include many of the industry's transport tank trucks and other interstate vehicles, state regulation of intrastate private carriers, following on the federal pattern, would result in *all* of the industry's trucks coming under either federal or state regulation, or both (pending the outcome of litigation over zones of authority).

Of course, the purely intrastate private carriers, such as tank wagons and intrastate-hauling transports, already are subject to many of the hundreds of truck regulatory laws on the statute books of the 48 states and the District of Columbia, and the thousands of regulations promulgated under their authority.

A list of all these laws and regulations would take volumes, and would include rules for handling of explosives and inflammables, safety rules, hours of service rules, equipment regulations, and all the rest. In some states they are relatively liberal, but they are still "regulation". Some states have adopted provisions of a so-called "uniform" law regulating motor carriers, a law drafted by interested highway-using, trucking and motoring groups; but others, often induced by lobbyists for competing carriers, have enacted laws or regulations which hamper the development and expansion of truck transportation.

One of these, and one of the latest to be issued, is the regulation of the Minnesota Railroad and Warehouse Commission which limits all tank trucks carrying "inflammable liquids" (gasoline) to 2000 gallons on highways of the state. Undoubtedly this regulation will reach a court test soon, as its provisions would exclude almost any transport truck. But again, the questions involved in both the Barnwell and McDonald cases, as well as cases which are certain to be brought under the ICC's "size and weight" regulations, are likewise paramount in the determination of Minnesota's right to exclude from its highways apparently under the guise of "safety", almost every transport tank truck.

Several states have regulations forbidding trucks from the highways on week-ends. One of them, Nebraska, has gone so far as to enact a law prohibiting transport tank trucks of over 900 gallons capacity from using the roads on all Sundays, July 4 and Labor Day between the hours of 6 a. m. and midnight.

Another example not only of the cramping restrictions which some states place on motor transport, but of the hodge-podge of state regulations, may be found in the U. S. Bureau of Public Roads' compilation, titled "Non-uniformity of State Motor Vehicle Laws", transmitted to Congress by the Secretary of Agriculture early this year.

The compilation points out that North Carolina restricts truck drivers' hours on duty to 7; Alabama, Delaware, Idaho, Indiana and Utah to 8; nine other states to 10, and so on, up to 14 hours on duty, which is the limit in Ohio and Texas.

But, liberal as Texas appears to be in this regulation, a look at its truck size-and-weight regulation is enough to convince an observer that most truckers would *have* to work 14 hours a day to get anything hauled, because Texas limits pay load of any truck not hauling to or from a railway terminal to 7,000 pounds—it takes less than 1,200 gallons of gasoline to weigh 7,000 pounds. If it is hauling to or from a railroad terminal, the maximum pay load is 14,000 pounds.

These scattered examples of state regulation, though only a drop in the bucket compared to the thousands shown in the booklet by the Bureau of Public Roads, go to show what the interstate oil trucker is up against, in his efforts to do business in conformity with federal and state laws.

But there is another field of state regulation into which the federal government is prohibited by law from interfering—taxation—and, as has been truly said so many times before: "The power to tax is the power to destroy."

State registration and other taxes on the motor carrier have been hiked skyward by leaps and bounds during the past several years, as the importance of truck transportation increased. Besides heavy registration fees, ton-mile taxes, taxes based on the width of tire surface, taxes for "operating authority", nearly every purported reason which could be devised, a number of states, particularly the West and Southwest, have enacted "port of entry" laws, which amount to nothing more than "tariffs" on goods being transported by truck from other states.

American Trucking Associations, Inc., estimates that motor trucks paid $417,510,000 in special truck taxes and fees, including gasoline tax, in 1937. This total, incidentally, while it does not include any of the ordinary business taxes, such as personal property, income and corporation levies, still "exceeded by $89,266,476 the amount of all taxes paid by all railroads", A.T.A. points out.

SOME random examples of state taxes and fees that have been piled on the trucker (private as well as for-hire; intrastate as well as interstate) are:

Georgia's registration fee which scales up to $2000 for a truck rated at 9 tons, and up to $1500 for a trailer or semi-trailer whose factory-weight is 10,000 pounds. (Contract and private carriers are subject to additional fees.)

Kansas' "port of entry fee" which charges 1.5 to 3 cents (depending on weight) per mile traveled in the state by trucks not registered in the state.

Louisiana's registration fees of 68 cents per horsepower, plus a weight charge scaling up to $50 per vehicle, plus a highway "compensation fee" of 50 per cent of the total of the two foregoing fees, plus an "inspection and supervision fee" for for-hire vehicles, based on gross receipts and scaling up to $1000, maximum.

While the Motor Carrier Act expressly provides that "Nothing in this Act" shall interfere with the right of the states to levy and collect taxes, organized motor and trucking groups are conducting a strenuous campaign for reduction of some of the excessive fees now assessed by many states.

A campaign against one type of fee in general—the port of entry fee—is being waged by National Highway Users' Conference, and other interested organizations. Already they have been successful in battering down some of the barriers which a Highway Users' bulletin of 1937 declared made state lines comparable to the "frontiers" between the belligerent and war-frightened countries of Europe. In most cases this has been achieved through enactment of "reciprocity" laws, grant-

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ing entry to vehicles of states which likewise granted "reciprocity".

In our consideration thus far of the situation as it exists today with respect to truck regulation, the picture seems to show state and federal governments vieing to see which can do most to hamstring truck transportation. This is not an entirely true picture, particularly as to the federal government's part in it.

Study of the eight volumes of "Motor Carrier Cases" on which opinions have been handed down by the ICC reveals that the commission has, in numerous decisions, granted oil truckers, and others, permission to operate despite railroad and similar protests.

It has cited the Motor Carrier Act as its authority for recognizing the "inherent advantages" of truck transportation over other forms in almost all opinions involving applications of oil truckers.

SOME of these advantages, the commission has found, are that trucks enable purchasers to get smaller quantities of petroleum products at a time, cutting size of investment and "assuring a fresh supply"; that trucks can haul direct to retail outlets, whereas a transfer of cargo is usually necessary in rail shipments; that trucks afford "a much more expeditious delivery", and "in the quantities required". The report in the case of Reuben F. Frei, Marysville, Kans., illustrates the ICC attitude:

"The record is persuasive that motor transportation of petroleum products possesses certain inherent advantages not found in rail transportation. A smaller amount of capital investment by dealers is required, and the lesser handling of dangerous commodities results in greater safety, especially in densely populated commercial areas."

Similar inherent advantages for highway transportation have been cited time after time in connection with not only petroleum carriers, but truckers of other commodities as well.

In the matter of rate regulation, however, while the ICC has not as yet made many determinations with respect to rates of truckers, there has been some suggestion of "railroad-mindness" in the commission actions.

For example, in the case of Lang Transportation Co., carrying petroleum products under a contract from San Francisco Bay to Ogden, Utah, ICC ruled that the trucker must raise his rates to correspond more nearly with the rail rates for the same movement, since, if it allowed the rails to cut rates to meet the trucks, as they sought to do, it would "incite widespread reductions in other reasonable (rail) rates and result in aggregate losses to railroads generally".

The "reasonability" of rates is the main factor in determining whether they are to be allowed, it appears from ICC orders. Thus, less than two weeks ago the commission cancelled tthe tariff of Capital Freight Lines and other motor carriers in the Southwest who proposed to cut their rates on petroleum products from Mobile, Ala., to Atlanta, Ga., on the ground they would not be "compensatory" to the motor carriers for their services, and therefore must be "condemned as unjust and unreasonable". The commission pointed to the policy of Congress, as declared in the Motor Carrier Act, to "foster sound economic conditions" in motor transportation.

Now, what of the future? So far we have concerned ourselves largely with what has been and is being done to regulate trucks.

For one thing, private truckers are girding to battle against what they foresee as attempts to further regulate the company-owned truck, and the petroleum industry is already playing a large part in plans of battle. J. F. Winchester of the American Petroleum Institute heads the petroleum section of the recently organized association of private carriers, and is active in further organization of industries using their own truck transportation against regulation.

Provisions of the present Motor Carrier Act, which permit even further steps toward regulation of the private carrier, once he is regulated as to the "safety" requirements already described, are the primary enemy of this organization, which sees in them the possibility that the ICC may require reports and accounting forms, or even go so far as to require ICC permission to operate.

THE private trucker has already been held subject to the provision of the act requiring ICC license tags—if the commission so orders. As yet the commission has not ordered private carriers to carry them, but carrying out of this one "discretionary" power would place the oil company, and any other company operating trucks in interstate commerce, almost in the same category as the contract and common carrier with respect to requirement of ICC permission to operate. To get tags, if they were required, would necessitate application to the commission, and, without doubt, the furnishing of certain information which, to say the least, would require more bookkeeping (in addition to the dozens of bookkeeping operations already required by government reports.)

But officials of the Motor Carrier Bureau, as presently constituted, indicate they have no plans for further regulation of private carriers beyond the safety requirements now under consideration. They have in

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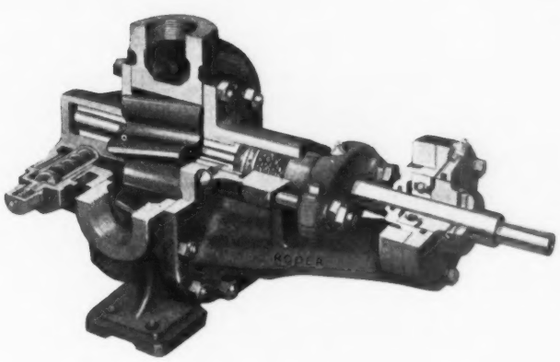

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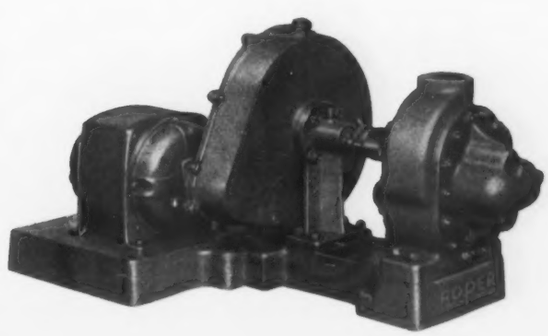

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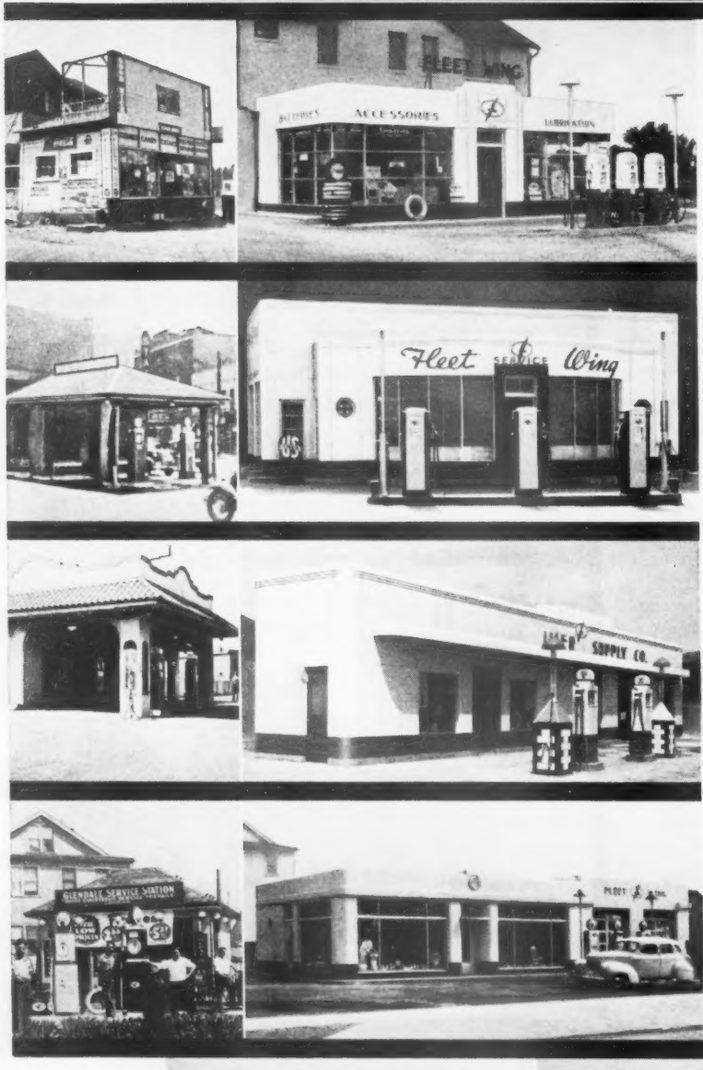

● Good petroleum products like all good merchandise attract *more* buyers when sold from an attractive setting. As a primary service to its customers, Fleet-Wing provides a reconstruction service that has helped scores of Fleet-Wing jobbers and dealers improve their stations and get *more* business from the *same* locations.

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The Fleet-Wing program is *tried* and *proven.* For fifteen years it has helped aggressive jobbers and independent dealers build their own businesses—at a profit. The Fleet-Wing plan is *complete.* It gives you:

Building and reconstruction service

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- ★ **No competition from your supplier**
- ★ **An independent jobber brand**
- ★ **A complete line of quality products**
- ★ **An assured source of supply**
- ★ **Continuous sales and merchandising cooperation**
- ★ **A program that builds profitable volume**

Some territory is available for the Fleet-Wing distributorship. We'll gladly discuss details with you at any time.

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AS modern as a Mainliner, *Stream-flo* Couplings preserve hose and insure free flow of fuel under all conditions.

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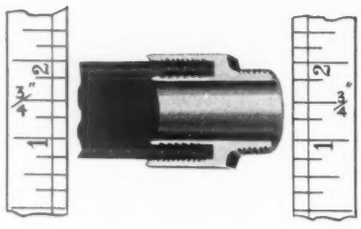

With *Stream-flo* the diameter of the hose bore determines the delivery volume. There is no restriction to flow in the coupling and no tendency to turbulence. Tube and body are forged from one piece of solid brass, making it impossible for them to come apart and the method of attaching the coupling to the hose end assures smooth even bore of the same diameter as the hose. Leading hose manufacturers and jobbers are now supplying *Stream-flo* couplings.

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mind no further amendments to the Motor Carrier Act which would in any way broaden the ICC powers, they say.

In answer to these two declarations, the private truckers may well point out that another set of officials in the Bureau at some later date may go further, spurred by the railroads and competing carriers, and may also ask Congress for even broader powers. Another angle is that, whether the ICC asks for it or not, Congress could easily enact broadening legislation and hand it to the ICC for administration.

A look into the future for common and contract carriers reveals that, as already pointed out, the ICC still has a number of discretionary powers which it has not exercised with regard to the for-hire carrier.

Also, and this applies with equal vigor to the private trucker, there are 44 state legislatures meeting in 1939. In many of these, the railroad and anti-trucking lobbies will be actively seeking to bring about further regulatory legislation.

ONE association, now organizing nationally, which will at least be friendly to any truck regulation proposed, if not actually its sponsor, is Private Motorists, Inc., headed by a group whose avowed purpose is to save the highways for the operators of private passenger cars. Its appearance in the field as an ally of the railroads in their lobbying activities against highway transportation was hailed recently in "Railway Age", which usually mirrors the rails' opinions, with:

"*Motorist Worm Turns.* Private motorists who are weary of having their self-appointed spokesmen serving as stooges for bus and truck operators and manufacturers, now have their own particular organization. 'Organized Motorists, Inc.' has been incorporated in the National Capital, with some very prominent citizens as its officers—and one of the purposes of the organization is to put a curb on the commercialization of the highways. More adequate taxation and strict safety regulation of the highway behemoths are two of the planks in the new organization's platform."

But "Commercial Car Journal", a publication for the truck industry, views the coming of the new organization into the transportation picture with a sniff. Under the heading "That Odor Again", it comments:

". . . . the hand-picked executives of this organization who form a directorate calculated to disarm the average motorist, will pardon the truck industry's sensitiveness in detecting here the penetrating odor of railroad herring."

While officials of the new organization disclaim any railroad guidance, sponsorship or affiliation, its aims fit in well with those of the anti-truck lobby.

The present "plight" of the nation's

railroads has led to many suggestions for its solution, one of the more frequently heard of which involves consolidation of all transportation facilities under one federal regulatory agency.

To a large extent this has already been accomplished, since ICC has regulatory power over trucks and railroads, and over water movements where they are a part of a joint movement with other carriers over which the commission has control. However, presumably the blanket control which is proposed would take into consideration relationship between rail, truck, barge and all rates of competing carriers, attempting to level them off at a point where all transportation systems could operate competitively.

This would mean that all over the country trucks might be required to hike their rates to make the rails competitive—as in the isolated case described above—and, to carry the presumption a step further, it might drive more and more industries into the field of hauling their products and supplies in their own trucks. So, in order to prevent this, any scheme of blanket rate control would have to do something about the private truck as well as the common and contract hauler.

Any such over-all regulatory scheme, while the rails would probably favor it, would undoubtedly be fought tooth and nail by many truckers—common, contract and private.

It may be a straw man, but so well known an authority as Sen. Burton K. Wheeler, Mont., chairman of the Senate Interstate Commerce Commission, has advocated the single control, although not to the possible extent projected in the above paragraphs. Also, there have been reports that the White House is amenable to the unified control idea as one part in the program it is expected to recommend to Congress next session for rail rehabilitation legislation.

Truly, trucking in general, including trucking of petroleum products, is a business venture hedged about not only by many "don'ts" and "musts", but also with many "mights" and "maybes".

$11,000,000,000 For Roads

WASHINGTON — Federal and state expenditures for highways during the 11 years ending with Dec. 31, 1938, will have amounted to $11,005,168,000, according to figures compiled by the National Association of State Highway officials, which estimates 1939 highway expenditures at $1,200,000,000—higher than in any previous year.

FIGHT FATIGUE with FULLERS IN YOUR TRUCKS

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FULLER Transmissions are offered as standard or optional equipment on most of America's best trucks. Available in models from four to eight speeds in the unit type, and ten to twelve in combination with an auxiliary, with choice of overdrive or underdrive. Provision made for power take-off on all unit transmissions.

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Transport 2 Out Of 3 Gallons Of Refined Products to Markets

(*Continued from Page* 41)

intermediate points along the line. Typical of these reductions, was the Cincinnati rate from the New Orleans-Baton Rouge Group which was to be slashed from 50 cents to 27 cents per hundred pounds.

In submitting this sweeping rate cut proposal, the S.F.A. by way of "justification" said, in part:

"The establishment of bulk terminals for handling gasoline and kerosine at river ports on the Mississippi and Ohio rivers and interior points in Alabama and Tennessee reached by navigable streams; the diversion of substantial tonnage from rail service to water service, and the further diversion from rail to truck service from the inland ports, has caused the railroads a great deal of concern. Various efforts have been made to retain part of this traffic for rail service by establishing rates from the refineries and the Gulf ports to the inland ports under fourth section (long-short haul requirement) relief, and the establishment of truck-competitive rates from inland ports. These efforts have only been partially successful."

Hearing was held on the rate cut proposal June 1, 1936, at Atlanta. Virtually every major company, as well as several independent refiners in Kentucky and other states to the east, had representatives present. They opposed the plan and, their opposition was especially vigorous to the proposal to extend the rate cut to southwestern refiners. It was contended that it was not up to the railroads to try and equalize competition between different refining districts.

This was before the discovery of new oil fields in Illinois and the increased production from Kentucky and Michigan, so that northern refiners were either using Mid-Continent crude or paying a price for northern crudes which reflected the Mid-Continent price, plus transportation of their refineries. These refiners contended that the rate cut would permit East Texas and Oklahoma refiners to "dump" gasoline in their backyards.

So the general rate cut proposal was dropped and the railroads resumed their "nibbling" at the rate structure with fourth section applications to meet barge and truck competition to specific points. Section 4 of the Interstate Commerce Commission prohibits the railroads from charging less for a long haul than for a short haul in the same direction over the same route, without obtaining in advance the ICC's permission to reduce rates to the specific destination while maintaining rates to intermediate points.

For the past several sessions of Congress, the rails have sought to have this section repealed, so that they could reduce their rates on long hauls to specific points to meet competition. Truckers have bitterly fought such bills, contending that it would give the rails a "death-dealing" weapon to wipe out competition.

Some of the oil companies objecting to the proposed general rate cut in 1936 were even then moving considerable volume of their products by water. Since then these companies and others have used barges more extensively, as increased tonnage figures for gasoline entering the Ohio River from the Mississippi indicate.

Even the 40-per cent rate cut proposed in 1936 by the Southern Freight Association might not have recaptured or retained all the oil tonnage which is now moving by barge.

This is indicated by a barging cost of 11.5 cents from Baton Rouge to Paducah, Ky., (as compared with the proposed cut of 37 to 25 cents in the Baton Rouge-Paducah rate in 1936) cited in a fourth section application filed with the ICC by the railroads.

This application, filed in July, 1938, proposes a steep rate cut to specific points to meet the competition of existing and proposed, barging operations on the Tennessee river which has been recently opened to navigation by the Tennessee Valley Authority (TVA) project.

This application stated that one major company was now barging from Baton Rouge, La., to Paducah, Ky. (on the Ohio at the mouth of the Tennessee river), at a transportation cost of 11.5 cents per hundred pounds. This major company was also said to have been quoted a barging figure of 6.5 and 7.5 cents to Sheffield and Decatur, and 7.5 cents to Guntersville and Florence—Alabama ports on Tennessee river named in the application, making a total of 18 and 19 cents, respectively, for the barge haul from Baton Rouge, up the Mississippi and down the Tennessee.

Present rail rates to these Tennessee river ports are from 37 to 42 cents and the application asks permission to reduce them to 25 cents, without reducing intermediate points, except for within trucking area of the river ports.

In this Tennessee river case, as in others in which similar rate cuts have been proposed—and made effective—they did not provide for corresponding reductions from points west of the Mississippi river, such as the Shreveport refining area. The rails argue that they don't want to reduce the rates from southwestern points because "the same form of competition (barges)" is not encountered there.

IN ITS petroleum rate case, Docket 17,000, Part IV, several years ago, the ICC declared its intention of preserving differentials between Gulf ports and stated that rates from southwestern origin points would have to be correspondingly reduced when reductions were made from points east of the Mississippi, as for example, the New Orleans-Baton Rouge Group.

Despite this, however, repeated reductions have been made from refining and terminal points east of the Mississippi river without applying the same reductions correspondingly to the Shreveport district and other west-of-the-river origins.

Even now, the Southern Freight As-

Gasoline Receipts At Marine Terminals At Principal Southeastern Ports*

(*Figures in Barrels*)

	1933	1934	1935	1936	1937
Norfolk, Va.	3,182,433	3,901,706	4,492,520	6,551,540	5,958,976
Wilmington, N. C.	3,290,418	4,190,032	5,216,490	6,054,810	7,134,127
Charleston, S. C.	3,457,254	3,727,339	3,769,320	3,845,770	4,437,086
Savannah, Ga.	3,290,718	4,128,594	5,287,530	6,231,230	6,297,776
Jacksonville, Fla.	2,596,453	2,980,285	2,949,670	3,689,820	3,555,891
Miami, Fla.	618,402	798,960	972,490	1,127,520	1,079,425
Tampa, Fla.	2,089,903	2,182,734	2,095,510	2,324,850	2,464,616
Mobile, Ala.	1,734,209	2,601,091	3,566,548	3,173,132	2,889,833
Pensacola, Fla.	631,847	686,563	945,999	568,152	406,937
Panama City, Fla.	.....	.....	.....	.....	1,274,997
Total	20,891,639	25,197,304	29,296,077	33,566,824	35,499,664
Increase over previous year	.....	20.61%	16.27%	14.58%	5.76%

*From the Office of Chief of Engineers, War Department, using a factor of 7.7 to convert tonnage figures to barrels.

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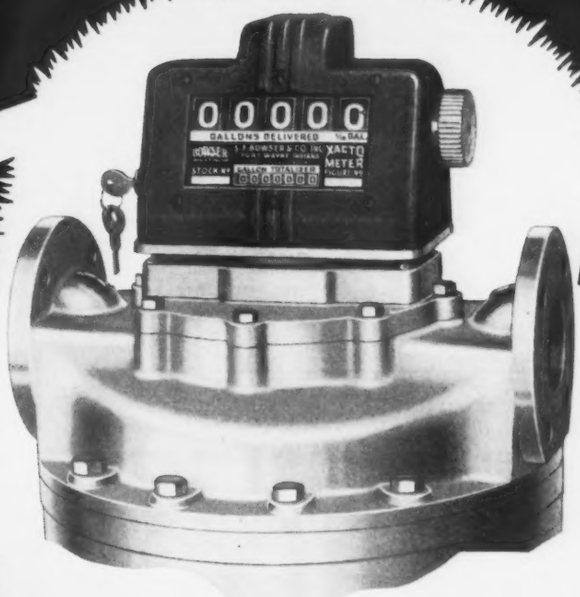

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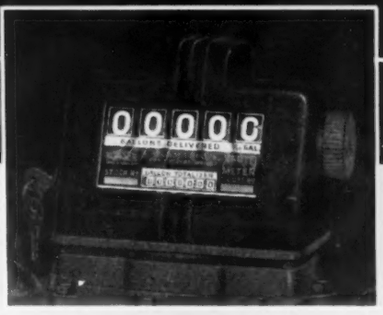

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. . . And you can see it at NIGHT, too. For after-dark truck deliveries—for truck fills — the ILLUMINATED Figures "loom" right up. With short days soon coming, here's a feature that's important—and one that you have long wanted. It's yours in the Model L at NO extra cost!

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sociation has up a proposal that the New Orleans-Baton Rouge Group rate to Atlanta be cut from 47 cents to 34 cents per hundred pounds, but without making any change in the Shreveport-El Dorado rate of 54 cents to Atlanta.

Pending before the Southwestern Freight Association (representing rail carriers operating in Oklahoma, Arkansas, Texas and other southwestern states) is a proposal to apply to Arkansas refining points in the so-called Shreveport area the same special, reduced rates to Tennessee and Mississippi points as have been granted on shipments from the New Orleans-Baton Rouge Group. Several major companies, with refineries in the New Orleans-Baton Rouge area, opposed the Arkansas rate cut at a hearing recently in St. Louis.

This proposal might be regarded as a "break" in the rails' attitude of refusing to reduce rates from west-of-the-river points, except for the fact that the rails are citing, as one reason for the reduced rates, the pipeline-barge operations of Lion Oil Refining Co., which has a refinery at El Dorado, Ark.

Last year, Lion laid a 14-mile gasoline pipeline to the Ouachita River. Now the company is barging down the Ouachita, into the Black River, then the Red River, and, reaching the Mississippi, turning northward up the "Father of Waters" to Memphis—a distance of 900 miles. Lion is now barging about 70 cars a month over this water route, and is planning to add several other Tennessee and Mississippi destinations shortly.

So, Lion's 14-mile pipeline and 900-mile water haul may be the means of opening up again a portion of the southeast to Arkansas refiners. Not so many years ago, the southeast was regarded as the "natural" marketing territory for refiners in the Arkansas-Louisiana-Texas district, but tanker competition blocked them from the long-haul markets while on shorter hauls the repeated rate reductions for the New Orleans-Baton Rouge district, without corresponding cuts from the Shreveport area, has increased the freight differential for the Ark.-La.-Tex. refiners.

A gasoline pipeline from the Shreveport area, across Louisiana to the Mississippi river at Natchez, has been talked for several years but nothing has come of it. This would open up the Mississippi and Ohio river systems for barging operations by Ark.-La.-Tex. refiners. Now the pipeline rumor is going around again; but it isn't a definite enough "threat" to win a railroad rate cut, apparently.

On the other hand, the Interstate Commerce Commission several months ago approved the railroads' application for a deep rate cut from Superior, Wis., to Minneapolis-St. Paul because Standard Oil Co. of Indiana had definitely stated its plans for building a pipeline from its Superior water terminal to the Twin Cities, if such a rate cut was not forthcoming.

The railroads do not regard gasoline pipelines, such as those running from the Mid-Continent, as "competition" enough to justify a rate cut for rail-shipping refiners because the pipeline tariffs are equivalent to the rail rates (although the pipeline shipper in virtually every case holds stock in the pipeline company and shares in its profits).

Pending at the ICC now is a complaint on behalf of a number of rail-shipping refiners in the Mid-Continent against a number of railroads and gasoline pipeline companies, charging that existing rates violate the Interstate Commerce Act. This petition, filed by James F. Lawrence, Tulsa rate attorney, also alleges that pipeline company dividends, received by pipeline-using oil companies owning stock in the pipeline company, amount to a "rebate" in violation of the Interstate Commerce Act and the Elkins Act.

IT WAS also charged in the petition that the railroads fix rates, on short-haul movements from pipeline terminals, at only 50 per cent of the maximum prescribed by the ICC, whereas Mid-Continent refiners shipping all-rail allegedly are required to pay the full, maximum rate on the long haul. Such rail-shippers, it was contended, are at a disadvantage of from 1 to 3 cents per gallon to the same destinations as compared with pipeline-using companies.

The rail-shipping refiners' petition takes the position that "in the interests of the public generally it is the duty" of the railroads to develop the refining business in the Mid-Continent, and asks that the ICC act on their complaint and fix "reasonable" rates.

Some of these same rail-shippers

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took part in the recent complaint to the ICC, seeking a lower estimated weight than the 6.6-pounds-per-gallon figure for the weight of gasoline now used in determining rail freight charges. This proposal, opposed by some pipeline-using refiners, is now up for decision by the ICC.

Similarly, rail-shipping refiners have pushed, but without success, for a "cargo" rate on gasoline; in other words, to have the ICC fix a lower rate for a whole trainload of tank cars moving from one origin to a specific destination.

The trainload-rate proposal has been bobbing around for years and was strongly endorsed by Transportation Co-ordinator Eastman (a member of the ICC) in 1935. This proposal, however, has always been confronted with the obstacle of the "discrimination" clause in the Interstate Commerce Act which prohibits the railroads from charging a lower rate for shipments larger than a carload. For example, if a rail-shipping refiner or large marketer were to get a trainload rate—lower than the rate on a single car—there "might" be discrimination against a single-car shipper at the same destination.

Pointing out that the "discrimination" clause was intended to protect the "little man," Eastman, in his report, said such a point could not be well made now against trainload rates on petroleum products because the large companies use their own pipelines and tanker fleets.

"If his (the 'little man' in the oil industry) condition were changed at all (by a trainload rate), it would be for the better, to the extent that alone, or in co-operation with others, he could take advantage of such rates," said Eastman.

CONCLUDING his remarks on this point, Eastman said: "Failure to provide cargo rates on petroleum products has discriminated against the small shipper and is not an inconsequential factor in the concentration of the petroleum industry in the hands of a relatively few concerns."

With this sympathetic attitude manifested by at least one member of the ICC, it has been suggested that perhaps the commission would now look with favor on a trainload-rate proposal, so that a marketer, or group of small marketers, could join in making up a "cargo" to one destination point, then have some sort of forwarding agency break up the trainload and send the cars to individual shippers at the single-car rate from the breakup point.

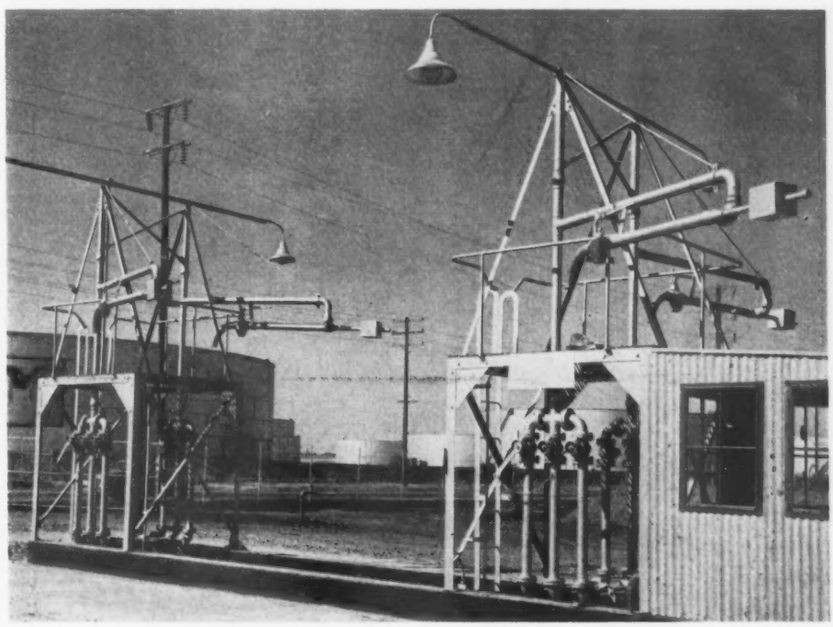
In point of fact, however, some major companies—especially some of those receiving their crude by pipeline from the Mid-Continent and refining it near the consumption centers—are still large customers of the railroads and, of course, would also benefit from trainload rates.

These refiners, although having their own carriers, have a sufficiently large tonnage still going by rail to cause the railroads to sit up and take notice when they threaten to go over to non-rail carriers. In witness of this was the recent rail rate cut from the Chicago refining district into eastern Iowa (which has brought another howl from the rail-shipping Mid-Continent refiners for a similar cut on their long-haul).

Midwestern marketers will state frankly that they have little hope of the railroads cutting their rates from Group 3 (Oklahoma) to put the smaller refiners on a par with those using pipelines and barges. But the continued loss of oil tonnage by the railroads to other carriers is said to have caused one or two rail executives, at least, recently to give some thought to a deep rate cut, such as the 1936 proposal mentioned earlier in this article. *IF*, such a proposal were ever made, it probably would be applied first to Mississippi and Ohio river points but eventually might have to be extended to west-of-the-river origins.

As for trainload rates—one railroad executive in the southwest mentioned the subject recently, and even went to the point of stating a rate figure for a comparatively short-haul to a crossing on the lower Mississippi.

While the railroads may not come forward with a rate-cut plan designed to win back and hold oil tonnage, as well as build up business for rail-shipping refiners, they can be counted on in the coming months to seek fur-



Another Modern Chiksan Installation

LOADING RACK HOOK-UPS ARE *Swinging to Chiksan!*

HERE'S a typical loading rack installation, using Chiksan malleable iron Ball Bearing Swing Joints throughout.

Notice how the single-arm arrangement saves on the number of Swing Joints used, yet permits handling **three** different grades of gasoline. Chiksan Joints are equally efficient when used on barge and marine terminal installations.

Chiksan Ball Bearing Swing Joints are pressure-tight and easy turning. **They have nothing to tighten, nothing to get out of adjustment and are not affected by weather conditions.** Wherever they are used they give greater efficiency and longer service at greatly reduced operating costs!

Write for blue prints of loading rack diagrams for your engineering department.

Swing Safely with Chicksan Swing Joints!

CHIKSAN BALL BEARING SWING JOINTS

CHIKSAN OIL TOOL CO., LTD.

FULLERTON, CALIFORNIA ☆ SHELL BUILDING, HOUSTON, TEXAS

What's Your Truck Doing All Day?

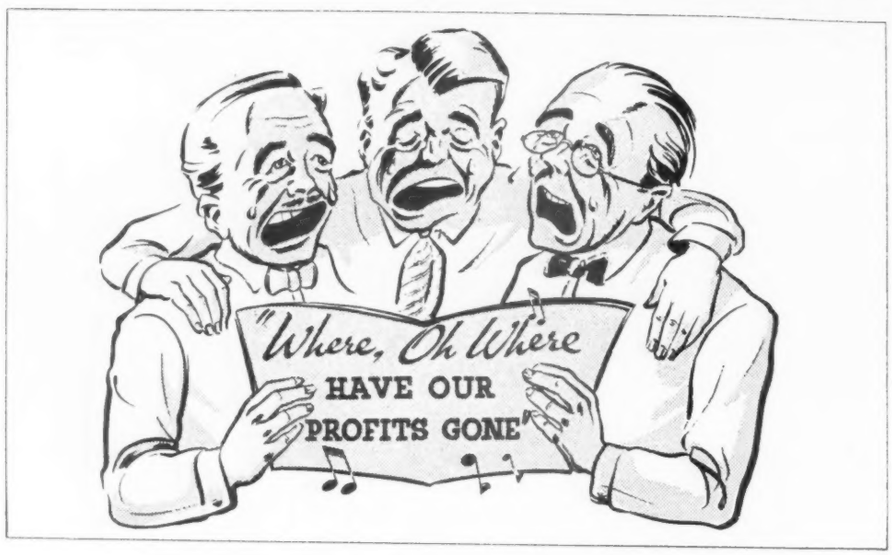
This Device Tells Every Move the Truck Makes!

Idle time—busy time—day and night (and overtime, too!)—all on a waxed chart (see at left). Here, for example, is a 2-hour delay, *and you can put your finger right on it!*—and then *correct* it! ¶ Over 100,000 trucks now equipped. Write for booklet: *"Ten Ways of Getting More Work Out of Motor Trucks."* It's free.

The Service Recorder Co. • 1422 Euclid Ave., Cleveland, O.

It "Points Out" All Delays!

THE SERVIS RECORDER
Keeps Trucks Busy



SINGING THE BLUES WON'T HELP!

SINGING THE BLUES won't help or improve any oilman's profit statement . . . particularly when so often there's a very simple reason for the missing profits that can be easily corrected.

Every oil merchandiser who has cut his eye teeth in the business, knows the folly of concentrating on the lowest-priced, low quality, cut-price oils . . . he knows that the sure way to stay in business is to hold customers.

No oil business ever went broke keeping customers!

If you are tired of working for nothing . . . if you want to see your customers, your repeats, and your gallonage grow steadily, at a substantial, worthwhile profit, get the facts on Premium Penn Motor Oil.

3-WAY PROTECTION

SUB-ZERO *protection* with instant pumpability and snappy starting.

WARM-UP *protection* that resists all motor friction and pressures.

HIGH-SPEED *protection* withstands searing heat at all driving speeds.

WINTER "SHOWS-UP" CHEAP OILS, and the smart merchandiser takes full advantage of the tough starting and driving conditions by selling his customers the best winter oil he can get . . . Premium Penn with its 3-Way Winter Protection keeps your customer's car starting and running sweetly all winter, and you've got an enthusiastic booster who will stick all year round.

Do yourself a good turn, mail the coupon!

Canfield — 100% PURE PENNSYLVANIA OIL

• TRIPLE ZONE •
Premium Penn
THE 5000 RPM MOTOR OIL

THE CANFIELD OIL CO., CLEVELAND, OHIO
Plants, Coraopolis, Pa., Cleveland, O., Jersey City, N. J.
☐ Send prices on Premium Penn Winter Motor Oils
☐ Winter E. P. Gear and Transmission Lubricants
We buy in ☐ Sealed Cans, ☐ Drums, ☐ Tank Cars
Name_____
Address_____

ther legislative and regulatory measures to restrict trucking.

Some well-informed traffic men in the oil industry look for an organized drive by railroad interests this winter against trucks in general; and, in particular, transport tank trucks, which they probably will contend are "hazardous" to highway travel; that the rails will seek further restrictions, such as the Saturday-Sunday-holiday ban on transports in Nebraska. With 44 state legislatures and Congress in session, the law-making potentialities of the coming year loom large.

On the other hand, there are some who believe that the "stake" in truck transportation has grown so in recent years—representing a $2,000,000,000 investment and providing employment for over 3,000,000 persons, besides providing a vital, flexible delivery system—that "vested interest" in highway transportation is now sufficiently deep-rooted to resist the rails' efforts.

Another angle of attack some traffic men expect from the railroads is the backing of a move to levy a toll on the use of waterways so as to "equalize" competing carriers. Still another, is the plan—mentioned a few weeks ago by Chairman Wheeler of the Senate Interstate Commerce Committee—of a federal agency to "regulate" all types of carriers (probably including those privately-operated, such as trucks, barges and tankers).

In an effort to stave off the threatened railroad pay cut, President Roosevelt has promised to do all in his power to "rehabilitate" the rail carriers. And the rail interests will not be backward in taking the President up on this.

Battery Makers Seek More Station Sales

CHICAGO, Nov. 4.—Selling of low price batteries in retail outlets, including service stations, was considered a problem of the manufacturer in development of salesmanship for higher price merchandise, at a discussion during the fourteenth annual convention of National Battery Manufacturers Association here recently.

It was pointed out that salesmen in chain and accessory stores may be familiar with fundamentals of "loss leader" merchandising to bring in customers, then to sell higher priced goods. Sales people in some retail outlets, including service stations, might not be familiar with price merchandise and would sell on price rather than endeavoring to sell better price grades.

The problem of low price battery sales, along with other industry merchandising problems, has been referred to a merchandising committee. The committee plans to gather statistics and study merchandising problems, then report back these fundamental facts to the industry.

L. B. F. Raycroft of the Electric Storage Battery Co., Philadelphia, was reelected president of the association for a fourth term.

New Equipment

AND THE MANUFACTURERS

EMERGENCY VALVE—A new type of truck tank emergency valve, in which the internal mechanism can be quickly and easily removed without removing the entire valve, has just been announced by the A. W. Wheaton Brass Works, 110 Walnut St., Newark, N. J. A twist with a wrench unlocks and removes the internal mechanism.

The valve cage is streamlined to prevent restriction in the flow of liquid entering the valve, and actual tests have proved 95 per cent efficiency in flow characteristics at low head pressure according to the company. The valve plunger is a floating type, which permits the valve disc to seat evenly. The valve also has a spring-loaded, self-tightening packing gland. Wear on the packing is automatically absorbed by the tension of a spring between two sets of glands and packings.

* * *

COUPLING DISTRIBUTOR — Announcement has been made of the appointment of the Pittsburgh Equitable Meter Co., Pittsburgh, Pa., as sole distributor for Raybould couplings and fittings, manufactured by the Raybould Coupling Co., Meadville, Pa. Grover E. Seaberg, manager of the coupling and fitting division, will direct sales for the meter company.

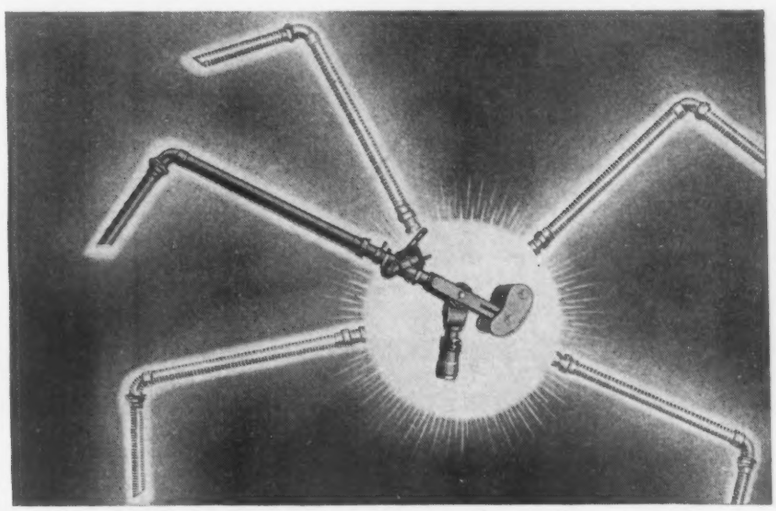
Features claimed for the Raybould coupling include: (1) designed for high pressures, the ability of the pipe being the limiting factor; (2) greatly increased coupling grip on pipe, and a sustained grip over a long period of time; (3) normal expansion, contraction or deflection of pipe does not affect joint; and (4) does not require any sizing operations on ends of pipes to maintain close tolerances.

Complete information may be obtained by writing the Pittsburgh Equitable Meter Co., 400 North Lexington Ave., Pittsburgh.

GASOLINE PUMP HOSE — Two new types of gasoline pump hose have been announced by the Goodyear Tire & Rubber Co., Akron, Ohio. This hose contains a synthetic compound in the tube that is impervious to the action of gasoline, according to the company. They are identified as Style BH and Style WWH.

The Style BH contains a body of three strong cotton braids with a strand of copper wire interwoven with the middle braid, which, when in contact with the fittings disposes of any static electricity that may be built up. Over the third braid is an abrasion and weather-resisting cover.

Style WWH has a circular woven jacket in the body which has inter-



The Oilco Assembly loads from both sides

Oilco Dome-Type Truck or Tank-Car

Loading Assemblies Convert Gas Stock Losses into Profits, Quickly Paying their Cost

So you, too, should install one or more Oilco Assemblies. Leading Oil Companies are re-equipping with them because they are (1) operated by the new Vacuum Control principle, making them lightning-fast, (2) leakproof under highest pressures, (3) end splash-outs, (4) reduce evaporation to the minimum, (5) protect against ignition from sparks, (6) built for continuous, heavy-duty service, (7) and operate for years without the investment of a single penny for repairs. Catalogue and price list mailed on request.

Manufactured in Canada by
EMPIRE BRASS & MANUFACTURING CO. LTD.
LONDON CANADA

OIL EQUIPMENT MFG. COMPANY
LOUISVILLE KENTUCKY

Oilco Dome-Type Loading Assembly

It doesn't waste a drop

Hays Double Seals and Copper Pipe...

Any joint in a gasoline line is a potential trouble maker and a costly one when buried below concrete. Use copper pipe from Tank to Pump—it bends to eliminate swing joints. Only a few Hays Double Seals are needed—one at each end and one every 60 feet. Thousands of modern gasoline pumps also use copper pipe and Double Seals inside the pump. Examine the Double Seal—See how 2 machined seats match the 2 faced flange of the pipe to make a joint of great mechanical strength. Write for complete data.

HAYS MFG. COMPANY, ERIE, PA.

Are You Thinking of Shipping By Water?

Here's what we can do for you—

1 — Supply Gasoline —
Any Grade — Any Quantity

2 — Supply Diesel Oil —
Any Grade — Any Quality

3 — Supply Fuel Oil —
Any Grade — Any Quantity

4 — Provide Tanker Terminal Facilities —
Along Gulf or Atlantic Coasts

5 — Arrange For Barge Shipments —
From Atlantic Coast Points To Almost Any Point on Navigable Waters on or East of Mississippi River

BRIEFLY—You tell us the Quantity and Quality of Products wanted and where you want delivery made—we will do the rest.

We supply Crude Oil and Refined Oil Products from and to all parts of the world.

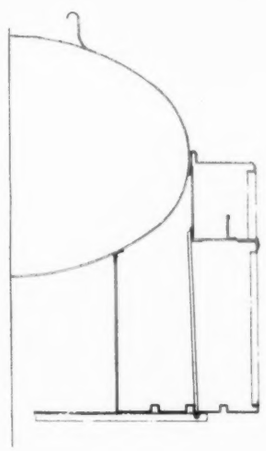
Petroleum Marketers Co.
152 W. 42nd St., New York, N. Y., Cable Address BROPECO

woven in it a steel spring wire, which functions to resist crush, and when the ends are in contact with the fittings, eliminates static electricity. Over the woven jacket is the abrasion and weather-resisting cover.

* * *

NEW DAVISBUILT TANK—A radical change in the standard Davisbuilt truck tank design and construction, resulting in a material reduction in weight, increased strength, improved appearance and serviceability, together with a reduction in maintenance, has been announced by the Davis Welding & Mfg. Co., Cincinnati, Ohio.

The new Davisbuilt "Beamtank" is designed in such a way that the tank itself is used as a beam to carry its own load, very much as the frame-



less trailer tank, even up to capacities of 4000 gallons or more, is used to carry its own load instead of depending upon the trailer frame.

In the place of bolsters are provided suspension members (see sketch) which are said to save considerable weight in the completed truck tank. The supports are fastened to the truck frame about one third from the rear and front ends of the tank, with the forward support having a rubber mounting. More details of this new construction, and of the Davis corrugated head, appear in the article on page 46 of this issue.

* * *

EXPLOSION-PROOF MOTORS—A new line of explosion-proof ball bearing motors has been announced by Fairbanks, Morse & Co., Chicago. These motors are built in NEMA frames and can be applied to pumps, blowers, production machines, etc., as easily as any standard open motor.

Double-end ventilation is one of the many features claimed for these new motors, assuring positive cooling from both ends of the motor and eliminating "hot spots", thus adding to the life of the motor windings. Full details of these motors can be obtained from the company in Bulletin 1225.

BUTLER TWIN-TANKS — Many revolutionary advances are claimed by the Butler Mfg. Co., Kansas City, for its Twin-Tank construction. This dual tank method has been used in the past for hauling casinghead gasoline, but in the last year has been in demand for transporting regular gasoline, according to the company.

For hauling regular gasoline, the Twin-Tank units are shaped cylindrical over the fifth wheel, and "abround" back of the fifth wheel, and tied integrally together in upright position. According to Butler, this construction made possible nearly ½ gallon more capacity per inch of tank length as compared to the conventional flat oval construction, as well as increasing its strength considerably.

In the Twin-Tank, the joint manholes and fill openings centered between the Twin-Tanks eliminate spillage overflowing the sides of the tanks. More details on this tank construction appear on page 46 of this issue.

* * *

NEW HOSE COUPLING—A new design of coupling has been introduced as standard equipment on its line of tank truck hose by the B. F. Goodrich Co., Akron. The new coupling is known as Permalock D Coupling, and is used with Types 75, 76, 78, 76-A, and 82 tank truck hose, distillate and fuel oil hose, butane and propane tank truck hose, and airplane refueling hose.

While these are permanent couplings, they can be removed from old hose by cutting off the outside ring and forcing the shank out of the hose so that in re-attaching, all the couplings can be salvaged except the outside ring. Permalock D Couplings are available with solid male and swivel female in 1¼, 1½, and 2-inch sizes.

* * *

SHAND & JURS EXPANDS — The Shand & Jurs Co., Berkeley, Cal., manufacturers of breather valves, flame arresters, automatic tank gauges, and other conservation equipment for oil storage tanks, has announced the opening of a factory branch office in Chicago. It will be under the management of R. W. Blake, and will be located at 565 West Washington Blvd. For the past two years Blake has been assistant manager of the company's New York office. The company has also announced the appointment of David Lindsay as manager of the factory branch office at Houston, Texas.

* * *

NEW FORD TRUCKS — The 1939 line of Ford V-8 trucks and commercial cars, designed to meet the requirements of more than 90 per cent of all commercial operations, has recently been announced by the Ford Motor Co. The new models, equipped with hydraulic brakes, are said to comprise the widest selection of capacities, gear reduction ratios and

they're 100% pure Pennsylvania

Here are motor oils refined from nature's finest crude, conditioned for cold-weather driving—10 W and 20 W grades in Beaver-Penn, Fort Pitt, Penn Trump and Four-State, or packed under your own brand name. Now is the time to stock-up for the winter change-over. We're all set to handle your order. If you are not familiar with Freedom quality and Freedom service, write for information today on the exclusive Freedom franchise in your territory.

THE FREEDOM OIL WORKS COMPANY, FREEDOM, PA.

Pacific Coast Bulk Plant and Warehouse: Los Angeles, California

CONVERTED FROM CARGO VESSEL TO TANKER

50,000 Bbl. Tanker
"AMSCO"

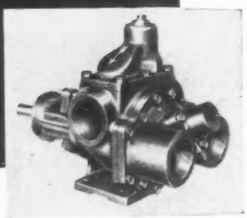
SHIPBUILDERS & ENGINEERS

THE INGALLS IRON WORKS CO.

Birmingham • New York • New Orleans • Pittsburgh

Builders of TANKERS, TOWBOATS, DREDGES, BARGES

THE FUEL OIL PUMP THAT'S 20 FEATURES BETTER



FEATURE NO. 2 No priming . . . no chatter . . . no air-locking because of the unique Granberg rotor construction . . . Built without gears or fins. Meets latest sealers of weights and measures wet-hose requirements.

SIZES AND CAPACITIES

Inlet & Outlet	Model	Capacity G. P. M.	Speed R. P. M.	Shipping Weights
1½"	D	60	500	43
2"	DEE	91	750	47
2"	EE	120	600	77
3"	H	300	600	171

Granberg ROTARY PUMPS

GRANBERG EQUIPMENT, INC.
4068 Holden Street, Oakland, California
Distributors in All Principal Districts
Write for name and address of one nearest you.

52 ISSUES $3

News . . . Markets . . . Technical developments . . . . Wage-Hour Law rulings and decisions affecting oil . . . Proposed Oil Legislation . . . Merchandising ideas. . . in

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Every Week

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NAME .....

St.-Box .....

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power that the company has ever offered.

There are 42 body and chassis types from which to choose, as well as two clutches, five transmissions and eight rear axle ratios. Three engines are available for 1939 — the 60 and 85, and the new 95-horsepower engines.

* * *

IHC ADVANCES JOHNSON—Carroll E. Johnson has been appointed assistant advertising manager of the International Harvester Co., succeeding A. C. Seyfarth, whose promotion to advertising manager was recently announced. Johnson joined the advertising department of this company in 1903, after several years of retail selling experience.

* * *

DODGE DIESEL — After 10 years of development, the Dodge Truck Division of the Chrysler Corp. is entering the oil burning engine field in 1939 with a Dodge diesel 3-ton truck. The new engine has full length water jackets, a by-pass thermostat, chain driven camshaft, full pressure lubrication and aluminum alloy pistons. It is a 4-cycle, 6-cylinder engine having 331 cubic inch displacement. The bore is 3¾ inches, the stroke 5 inches, and the crankshaft has 7 main bearings.

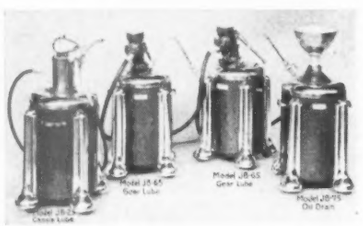
Engineering features include an automatic injection advance, simplified injection pump, anti-clogging nozzle, and an improved combustion chamber.

* * *

PORTABLE LUBRICATING UNITS—Four new portable lubricating units, known as U. S. Silver Scouts, have just been announced to the trade by the U. S. Air Compressor Co., Cleveland, O.

Termed by the company the Four Horsemen of Lubrication, these units consist of one model JB-25 Silver Scout Chassis Lube, two model JB-65 Silver Scout hand operated gear lubes, and one model JB-75 Silver Scout waste oil drain.

The unit tanks hold the original 25-pound container or 65 pounds of lubricant in the bulk. Both the JB-25 and the JB-65 come equipped with a new type rotary air valve. Model JB-25 is equipped with a new gun which is said to be grease tight and has a fast trigger action. Model JB-65 has a new heavy dutymeter having a large dial. The pump has a patented feature which it is claimed will eliminate any possibility of air registering on the meter dial when container supply is exhausted.

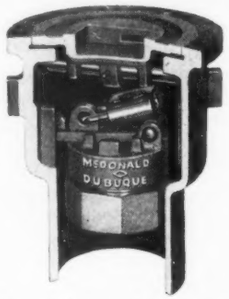


This equipment, as well as the U. S. Air Liner and the U. S. Jack-in-the-Box Cover, will be on display at the Automotive Service Industries Show in Chicago starting Dec. 5. The company's exhibit will occupy booths S1, S3, S5, and S7, just at the right of the entrance.

* * *

FILL BOX — A new type of flush fill box is announced by A. Y. McDonald Mfg. Co., Dubuque, Ia. The Plate 969 McDonald Settle-Proof flush fill box, as it is known, is designed to protect underground connections from strains caused by settling of a tank.

The box consists of a cast-iron manhole with quick-opening cover and an inner all-bronze type screw fill cap. This cap, screwed to the fill pipe, is separate from the iron manhole, so that settling of the tank places no strain on connections. When the inner cap is locked in position, ribs on the inside of the manhole prevent the cap from being turned. Sizes are 2, 2½, and 3 inches.



Refined Products Offset Coastwise Crude Decline

CLEVELAND, Nov. 5.—A slight decline in coastwise shipments of petroleum and petroleum products this year is shown by statistics of the Bureau of Foreign and Domestic Commerce now including seven months of 1938. The decline is entirely in crude oil shipments, the accompanying table shows, which amounts to 10.5 per cent. The three leading refined products all made gains which, with other minor products, reduced the net decline in coastwise movements to less than 3.5 per cent.

Coastwise Shipments of Principal Petroleum Products and Crude Oil from Gulf Ports to Atlantic Ports During the First Seven Months of 1937 and 1938

(*Figures in Barrels*)

	1938	1937
Crude Oil	94,800,000	105,800,000
Gasoline	60,300 000	57,800,000
Fuel and Gas Oils	44,550,000	42,650,000
Kerosine	9,860,000	7,950,000
Total	216,500,000	224,000,000

Sales Manager Resigns

DALLAS, Nov. 5.—Ralph E. Bishop has resigned his position as sales manager of the East Texas Refining Co., effective Nov. 1. He had been with the company since its organization in 1931. He is leaving Dallas to make his home in Los Angeles.

J. B. Cashell, former manager of the company's service stations in East Texas, will take Bishop's position as sales manager.

Barge-Truck Rate is Proposed For Oil in Pacific Northwest

WASHINGTON, Nov. 5. — Lower transportation costs for bringing California petroleum products to inland destinations in Washington and Oregon are proposed by truckers in the northwestern states, who have asked the Interstate Commerce Commission to OK their proposal for joint barge-rail rates.

The plan contemplated a long barge haul up the Columbia River, and distribution by truck from river ports. Joint rates proposed are approximately 20 per cent less than through all-rail or all-truck rates from Portland.

Asbury Transportation Co., one of the proponents of the new rates, is reported ready to construct adequate petroleum storage on the river at Umatilla, Ore., about 200 miles upstream from Portland, and about 100 miles above The Dalles, from which a combination barge and truck movement has been under way for some time.

As outlined, the plan of the truckers would use the Inland Navigation Co.'s 300,000-gallon motor vessel, Inland Chief, which is now operating to The Dalles, to make the bulk deliveries to Umatilla.

To meet the existing and proposed water competition, rails are said to be considering asking the ICC for authority to cut their rates on petroleum from the coast to the inland points by 25 per cent. There is some question of this being granted, however, even if sought, since Montana refiners already have on file with the ICC a complaint asserting that a preferential rail rate already exists from the coast eastward.

Already there is barge movement of petroleum products on the river, even above Umatilla. Kirk Thompson, Attalia, Wash., distributor, barges upstream to his bulk terminal, about 35 miles above Umatilla.

One effect which marketers in the area foresee if the combination rate is allowed to Umatilla is that it will make California refiners more competitive with refiners at Spokane, Wash., and Pocatello, Idaho, as well as with supplies originating in Montana and Wyoming.

Development of transportation on the Columbia has come about through the Dennison inland waterways stabilization act, as amended through efforts of Senator Borah in 1934 to include the Columbia and Snake Rivers.

A year ago water movement of petroleum products on the Columbia was not so expeditious as at present. At that time the Bonneville Dam had not been completed, and a trans-shipment at the dam of petroleum products from the Inland Chief to barges was necessary to carry the oil on upstream. Now, the Inland Chief runs direct to The Dalles. The dam is about midway between Portland and The Dalles.

New York Barge Canal

On the New York State Barge Canal in 1937 a total of 1,754,000 barrels of gasoline and 1,020,000 barrels of fuel oil were barged to the Buffalo area and 1,008,000 barrels of gasoline and 209,000 barrels of fuel oil passed into Lake Ontario at Oswego. About two-thirds of this volume passed southward through the Welland Canal bound for U. S. ports. These figures show continued declines in volume from 1936 and 1935. Northbound lakewise movements of gasoline on the Black Rock canal paralleling the Niagara river, however, showed gains. There were 368,500 barrels of gasoline moved into the Buffalo-Tonawanda area in 1937 as compared with 138,000 barrels in 1936.

Republic's Program Provides

- No Competition From Your Supplier.
- An Independent Jobber Brand.
- A Complete Line of Quality Products.
- An Assured Convenient Source of Supply.
- Continuous Merchandising and Sales Co-operation.

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Successful Independent Jobbers

Write, wire or phone the nearest Republic office for details on an exclusive territory franchise

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Petersburg, Va.; Savannah, Ga.; Jacksonville, Fla.; Wilmington, N. C.; Greensboro, N. C.; Baltimore, M. D.; 30 Rockefeller Plaza, New York City; Second National Bank Bldg., Houston, Tex.; P. O. Box 944, Norfolk, Va.; Hopewell, Va.; Benedum-Trees Bldg., Pittsburgh, Pa.

REPUBLIC OIL CO.

BENEDUM TREES BLDG. PITTSBURGH PA.

☆ ☆ **In solvent refining, the Furfural Process offers the refiner a unique combination of economy, simplicity and flexibility** ☆ ☆ ☆ ☆ ☆ ☆ ☆ ☆ ☆

In today's competitive markets, the Furfural Process offers the refiner outstanding advantages.

Operating and investment costs are uniquely low.

Because of its flexibility this process can be applied to a wide range of oils.

The quality of product is extremely high. The success of Furfural-refined oils indicates the importance of quality as a factor in selling to today's critical buyers.

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JERSEY CITY, NEW JERSEY

Markets

Mid-Continent

TULSA, Nov. 7. — Gasoline was offered more sparingly from Mid-Continent plants, according to reports last week. Quotations reported by Mid-Continent suppliers generally were unchanged except in East Texas where 400 e.p. gasoline was offered 0.5 cent lower at 4 cents. Gasoline shipments against contracts were heavy, sellers said. Only scattered sales were reported in the open spot market.

Orders placed in Texas for Grade 26-70 and other grades of natural gasoline for rush delivery to the Gulf Coast were said to have relieved top-heavy stocks in the Breckenridge district. Oklahoma supplies were more closely held with quotations, f.o.b. Group 3, ranging from 2.75 to 3 cents, according to reports.

Kerosine was in light demand although supplies were closely held, traders said.

Pennsylvania

CLEVELAND, Nov. 7. — Movement of most products from western Pennsylvania refineries was reported fairly steady the first week of November. Aside from a 0.25-cent reduction in U. S. Motor gasoline, no changes in quotations were reported.

Several refiners said competition from Michigan straight run gasoline for Ohio business had increased considerably and they had reduced their U. S. Motor quotations to 4.75 cents in an effort to meet Michigan prices. Unconfirmed reports of lower-priced "Q" gasoline also were heard throughout the week.

Some traders continued to report scarcity of wax. On the other hand, a buyer said he had inquired recently and had been offered a total of 400 tons by seven refiners with prices ranging, he said, from 2.25 to 2.4 cents per pound, New York. No changes in quotations were reported by refiners.

Continued reports of lower prices on bright stock lacked confirmation.

Mid-Western

CHICAGO, Nov. 7. — Chicago tank car marketers generally reported more limited open market offerings of gasoline the first week of November. Jobber interest centered on shipments against contracts. Ideal motoring weather prevailed throughout the midwest area but spot transactions generally were slow, traders said. Two marketers reported advancing their quotations 0.125 cent to 4 cents for 67-69 octane gasoline. Other grades generally were reported unchanged.

N. P. N. Refinery Index

The Refinery Index shown below is the calculated average return from refining a barrel of 36 gravity Mid-Continent crude into its various principal products at the current price of crude oil. The index indicates the following margins in cents per barrel (42 gallons) between cost of crude and current selling price of products.

Date	Margin
Nov. 1.	45.7
Month ago	25.8
Year ago	48.8

A Michigan refiner reported reducing his quotations on straight run and 70-72 octane gasoline 0.25 cent to 5 cents and 8 cents, respectively. Offerings of straight run gasoline were somewhat freer at the close of the week while higher octane grades were more closely held, most refiners said.

Kerosine was offered more sparingly although demand, for the most part was irregular, Chicago sellers said. Michigan refiners, however, continued to report active demand for this product.

Gulf

NEW YORK, Nov. 7. — Grade C bunker oil, which has been practically dormant most of the year, snapped to life last week, with one cargo reported sold for export shipment at 63 cents, and two domestic cargoes reported closed at 60 cents, per barrel, f.o.b. the Gulf. All three cargoes are for November-December lifting.

Following these sales, some suppliers reported advancing their prices. Most traders said they expected that future sales would be nearer 65 cents per barrel. They based their contentions on an expected heavy demand from domestic industry, and a continued call from foreign buyers.

N.P.N. Gasoline Index

	Dealer T.w. Cents per	Tank Car gal.
Nov. 7.	9.91	5.59
Month ago	9.92	5.74
Year ago	10.42	6.41

Dealer index is an average of "undivided" dealer prices, ex-tax, in 50 cities.

Tank car index is a weighted average of 12 wholesale markets for regular-grade gasoline.

The gasoline picture has not changed materially since the recent crude cuts with prices generally nominal in the face of virtually no buying and little inquiry, according to reports. Virtually all sellers said they were asking a minimum of 4.5 cents for 60 octane gasoline and 4.75 cents for 65 octane.

Kerosine, gas oil and No. 2 fuel oil generally were steady despite a lack of inquiry or sales, traders said. No. 2 fuel oil and export gas oil were held at a minimum of 3.5 cents, with the higher diesel index grades of the latter nominally quoted 0.125 to 0.25 cent higher, reports indicated.

Eastern

NEW YORK, Nov. 7. — Continued heavy consumption of gasoline in eastern seaboard states, as a result of the mild weather throughout October and the first week of November, was the highlight of petroleum markets in the east.

The continued heavy retail demand has resulted in reduction of the country's gasoline stocks to a point where stocks at the end of October were below those of a year ago. Traders here generally pointed to the betterment of the statistical position of gasoline. Prices, except in a few key markets, were steady, they said. Unconfirmed reports of price shading continued to be heard in the New York harbor market.

Fuel Oil

NEW YORK, Nov. 7. — Kerosine and No. 1 fuel oil were offered at lower prices, both in tank car lots and for shipment in barges, in the New York harbor market, according to reports the week ended Nov. 5.

Continued mild weather has resulted in relatively little domestic burner fuel being consumed, and a resultant drop in takings in the wholesale market, traders said. Several expressed the opinion that lower-priced offerings of No. 1 and kerosine were the result of some suppliers attempting to force movement. Nos. 2 and 4 oils also were easy in most markets along the eastern seaboard, reports indicated.

* * *

CHICAGO, Nov. 7. — Light burner fuels were offered sparingly in the open market the first week of November despite slow jobber demand, according to reports of most Chicago traders. Michigan refiners also reported comparatively little interest in light fuels. Stocks of all grades, however, were reported low.

Industrial fuel demand improved slightly although stocks remained large, Chicago traders said. On the other hand, heavy fuel stocks were reported in good shape by most Michigan refiners. Demand was better from

(*Continued on page* 139)

REFINERY TANK CAR MARKETS

All prices on this page are publisher's opinion of open market quotations or sales, for spot shipment (10 to 15 days). Prices in cents per gallon except heavy fuel oils in dollars per barrel of 42 gallons, tank car lots, f.o.b. refineries in districts designated, except where otherwise noted. Inter-refinery and export prices not included, unless so stated in the respective markets. Federal, state or municipal taxes not included. Prices quoted apply on products made from legally produced crude. Unless otherwise noted, gasoline octane ratings are determined by C.F.R. Motor method, A.S.T.M. D-357-33T; and lubricating oil specifications determined according to A.S.T.M. methods, unless otherwise noted.

Natural Gasoline

(Prices to blenders on freight basis shown below. Shipments may originate in any Mid-Continent manufacturing district.)

Prices Effective	Nov. 7	Oct. 31
F.O.B. GROUP 3		
Grade 26-70	2.75 – 3.00	2.75 – 3.00
F.O.B. BRECKENRIDGE		
Grade 26-70	2.75	2.75
CALIFORNIA (F.o.b. plants in Los Angeles basin)		
75-85, 350-375 e.p. for blending	6.25 – 6.50	6.25 – 6.50

Kerosine

WESTERN PENNA.		
Bradford-Warren:		
45 w.w.	5.125	5.125
46 w.w.	(e) 5.25 –5.375	(e) 5.25 –5.375
Other districts:		
45 w.w.	4.75 – 4.875	4.75 – 5.00
46 w.w.	(e)4.875	(h) 4.875–5.125
47 w.w.	5.00 – 5.25	5.00 – 5.25
CENTRAL MICHIGAN (a)		
47-49 w.w.	5.00 – 5.30	5.00 – 5.30
OKLAHOMA		
41-43 w.w.	3.875– 4.25	3.875– 4.25
42-44 w.w.	4.125– 4.625	4.125– 4.625
KANSAS (For Kansas destinations only).		
41-43 w.w.	(e)4.25	(e)4.25
42-44 w.w.	4.50 – 4.563	4.50 – 4.625
N. TEX. (b)		
41-43 w.w.	4.25 – 4.50	4.25 – 4.50
N. LA. (For shipment to La. and Ark.)		
41-43 w.w.	4.00 – 4.50	4.00 – 4.50
ARK. (F.o.b. Ark. plant of one refiner, for shipment to Ark. and La.)		
41-43 w.w.	4.50	4.50
CALIFORNIA		
40-43 w.w.	5.00 – 7.00	5.00 – 7.00

Gas *and* Fuel Oils

WESTERN PENNA.		
Bradford-Warren:		
36-40	4.375– 4.50	4.375– 4.50
Other districts: (Excluding Pittsburgh District Prices).		
36-40	3.875– 4.00	4.00
CENTRAL MICHIGAN (a)		
P.W. Distillate	4.75 – 4.875	4.75 – 4.875
No. 3 gas oil, Str.	4.25 – 4.625	4.25 – 4.625
U.G.I. gas oil	4.00 – 4.375	4.00 – 4.375
Fuel Oils (Vis. at 100):		
500-700 Vis.	2.125– 2.50	2.25 – 2.50
300-500 Vis.	2.25 – 2.75	2.375– 2.75
100-300 Vis.	2.375– 3.25	2.50 – 3.25
OKLAHOMA		
No. 1 prime white	3.75 – 4.00	3.75 – 4.00
No. 1 straw	3.625– 3.875	3.625– 3.875
No. 2 straw	3.50 – 3.75	3.50 – 3.75
No. 2 dark	(e)3.375	(e)3.375
28-30 fuel oil	(e)3.25	(e)and(k)3.25
28-30 zero fuel	3.25 – 3.50	3.25 – 3.50
24-26 fuel	(e)$0.925	(e)$0.925
14-16 fuel	(e)$0.70	(e)$0.70
KANSAS (For Kans. destinations only).		
No. 1 p.w. fuel oil	4.00 – 4.125	4.00 – 4.125
10-14 fuel oil	$0.45 –$0.80	$0.45 –$0.80
N. TEX. (b)		
No. 1 Prime white	(e)4.00	(e)4.00
N. LA. (For shipment to La. and Ark.)		
20-24 fuel	(e) $1.00–$1.05	(e) $1.00–$1.05
16-20 fuel	(e) $0.80–$0.85	(e) $0.80–$0.85
10-14 fuel	(e) $0.70–$0.75	(e) $0.70–$0.75
ARK. (F.o.b. Ark. plant of one refiner, for shipment to Ark. and La.)		
No. 2 fuel	3.625	3.625
28-30 gas oil, zero	3.375	3.375
Ark. Tractor Fuel	(j)4.50	(j)4.50

Prices Effective	Nov. 7	Oct. 31
CALIFORNIA		
San Joaquin Valley:		
Heavy fuel	$0.55 –$0.75	$0.55 –$0.75
Light fuel	$0.65 –$0.85	$0.65 –$0.85
Diesel fuel (per gal.)	3.00 – 4.00	3.00 – 4.00
Stove dist. (per gal.)	3.75 – 5.00	3.75 – 5.00
Los Angeles:		
Heavy fuel	$0.45 –$0.90	$0.45 –$0.90
Light fuel	$0.60 –$1.00	$0.60 –$1.00
Diesel fuel (per gal.)	2.50 – 4.00	2.50 – 4.00
Stove dist. (per gal.)	2.75 – 5.00	2.75 – 5.00
San Francisco:		
Heavy fuel	$0.95	$0.95
Light fuel	$1.05	$1.05
Diesel fuel (per gal.)	4.50	4.50
Stove dist. (per gal.)	5.50	5.50

Note: All above heavy fuels meet Pacific specification 400; light fuel, spec. 300; Diesel fuels, spec. 200; and stove distillate, spec. 100.

Neutral Oils

WESTERN PENNA. (Refiners report no open spot market sales being made to jobbers and give following as their quotations only.)

Viscous Neutrals No. 3 col. (*Viscosity at 70° F.*)		
200 Vis. (180 at 100°) 420-425 fl.		
0 p.t.	19.00	19.00
10 p.t.	18.00	18.00
15 p.t.	17.50	17.50
25 p.t.	16.00	16.00
150 Vis. (143 at 100) 400-405 fl.		
0 p.t.	17.00	17.00
10 p.t.	16.00	16.00
15 p.t.	15.00	15.00
25 p.t.	14.00	14.00

SOUTH TEXAS

Vis. Color		
Pale Oils: (*Vis. at 100°F.*)		
100 No. 1½-2½	4.75 – 5.25	4.75 – 5.25
200 No. 2-3	6.25	6.25
300 No. 2-3	6.75	6.75
500 No. 2½-3½	7.75	7.75
750 No. 3-4	8.25	8.25
1200 No. 3-4	8.75	8.75
2000 No. 4	9.00 – 9.25	9.00 – 9.25
Red Oils:		
200 No. 5-6	6.25	6.25
300 No. 5-6	6.75	6.75
500 No. 5-6	7.75	7.75
750 No. 5-6	8.25	8.25
1200 No. 5-6	8.75	8.75
2000 No. 5-6	9.00 – 9.25	9.00 – 9.25

Note: Red oil prices cover oils with green cast; blue cast red oils are slightly lower in some cases.

MID-CONTINENT (Vis. at 100° F.; F.o.b. Tulsa basis).

Pale Oils: (0 to 10 P.P.)		
Vis. Color		
60-85—No. 2	5.50	5.50
86-110—No. 2	6.00	6.00
150—No. 3	9.00	9.00
180—No. 3	9.50 –10.00	9.50 –10.00
200—No. 3	10.00 –10.50	10.00 –10.50
250—No. 3	11.00 –11.50	11.00 –11.50
280—No. 3	12.50	12.50
300—No. 3	13.00	13.00
Red Oils:		
180—No. 5	(e)9.00	(e)9.00
200—No. 5	9.00 –10.00	9.00 –10.00
280—No. 5	11.50 –11.75	11.50 –11.75
300—No. 5	(e)12.00	(e)12.00

Note: The following oils, of 15 to 25 p.p., are generally quoted these amounts under 0-10 p.p.; viscous oils, 0.5c; non-viscous, 0.25c. Viscous oils (150-300 vis.), No. 4 color, generally are quoted 0.5c above No. 5 color oils.

CHICAGO (Vis. at 100° F.)

Pale Oils 0 to 10 p.p.:		
Vis. Color		
60-85—No. 2	7.25	7.25
86-110—No. 2	7.75	7.75
150—No. 3	9.00	9.00
180—No. 3	10.00	10.00
200—No. 3	10.50	10.50
250—No. 3	11.50	11.50

Prices Effective	Nov. 7	Oct. 31
CHICAGO (Continued)		
Red Oils:		
180—No. 5	9.00	9.00
200—No. 5	9.50	9.50
250—No. 5	10.50	10.50
280—No. 5	11.50	11.50
300—No. 5	11.75	11.75

Note: Viscous oils, 15 to 30 p.p. are quoted 0.5c lower; 60-85 and 86-110 No. 2 non-viscous oils, 15 to 30 p.p., 0.25c lower. To obtain delivered prices in Chicago, add 0.25c per gal.

Cylinder Stocks

MID-CONTINENT (F.o.b. Tulsa basis)		
Bright Stocks:		
190-200 Vis. at 210 °D.	(e)19.00	(e)19.00
150-160 Vis. at 210°D:		
0 to 10 p.p.	14.25 –16.00	14.25 –16.00
10 to 25 p.p.	13.50 –15.50	13.50 –15.50
25 to 40 p.p.	13.50 –15.00	13.50 –15.00
150-160 vis. at 210° E.	12.50 –15.00	12.50 –15.00
120 Vis. at 210° D		
0 to 10 p.p.	14.50 –15.125	14.50 –15.125
25 to 40 p.p.	(e)14.25	(e)14.25
600 S.R Dark Green	5.00 – 7.50	5.00 – 7.50
600 S.R. Olive Green	6.50 – 7.50	6.50 – 7.50
631 S.R.	(e)12.50	(e)12.50
Black Oil	3.50 – 4.00	3.50 – 4.00

CHICAGO (Viscosity at 210°)		
Unfiltered Steam Refined:		
140	9.00	9.00
160	10.00	10.00
200	11.00	11.00
Bright stocks, 160 vis. at 210, No. 8 color:		
0 to 10 p.p.	15.75	15.75
15 to 25 p.p.	14.75	14.75
30 to 40 p.p.	14.25	14.25
E filtered Cyl. Stock	13.50	13.50

Note: To obtain prices delivered in Chicago, add 0.25c per gal.

WESTERN PENNA. (Refiners report no open spot market sales being made to jobbers and give following as their quotations only.)

600 S.R. filterable	8.00	8.00
650 S.R.	10.00	10.00
600 fl.	(h)10.50	(h)10.50
630 fl.	13.00	13.00
Bright stock, 145-155 vis. at 210°, 540-550 flash, No. 8 color:		
10 p.t.	17.00	17.00
15 p.t.	16.00	16.00
25 p.t.	14.00	14.00

Petrolatums

WESTERN PENNA. (In bbls., carloads; in tank cars, 0.5c less)		
Snow White	5.875– 6.125	5.875
Lily White	4.875– 5.125	4.875
Cream White	3.875– 4.125	3.875
Light Amber	2.50	2.50
Amber	2.25	2.25
Red	(e)2.125	(f)

Wax

WESTERN PENNA. (Refiners report no open spot market sales being made to jobbers and give following as their quotations only. In bbls., carloads, New York)		
122-124 A.m.p., w.c. scale	(h) 2.35 –2.40	(h) 2.35 –2.40
124-126 A.m.p., w.c. scale	2.30 – 2.35	2.30 – 2.35
OKLAHOMA (In bbls. or burlap bags, carloads)		
124-126 A.m.p., w.c. scale	2.35	2.35

CHICAGO (In bags, carload lots. Melting points are E.M.P. (A.S.T.M.) methods; add 3° F. to convert into A.m.p.)

Fully refined:		
122-124	4.00	4.00
125-127	(i)4.10	(i)4.10
127-129	(i)4.45	(i)4.45
130-132	(i)4.75	(i)4.75
132-134	(i)5.00	(i)5.00
135-137	(i)5.75	(i)5.75

(a) Prices f.o.b. Central Michigan refinery group basis, for shipment within Mich. Shipments may originate at plants outside Central group. (b) For shipment to Texas and New Mexico destinations; Group 3 prices quoted on northern shipments. (c) Excluding Detroit shipment. (d) Nominal. (e) One refiner quoting. (f) No price reported. (g) To resellers holding licenses. (h) Two refiners quoting. (i) Same prices quoted in bags or slabs loose. (j) For shipment to Ark. points only. (k) Correction: This price correct for Oct. 31.

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REFINERY TANK CAR MARKETS

All prices on this page are publisher's opinion of open market quotations or sales, for spot shipment (10 to 15 days) unless otherwise stated. Prices in cents per gallon, except heavy fuel oils in dollars per barrel of 42 gallons, wax and petrolatums in cents per pound in barrels, tank car lots, f.o.b. refineries in districts designated, except where otherwise noted. Inter-refinery and export prices not included unless so stated in the respective markets. Federal, state or municipal taxes not included. Prices quoted apply on products made from legally produced crude. Unless otherwise noted, gasoline octane ratings are determined by C.F.R. Motor method, A.S.T.M. D-357-33T; and lubricating oil specifications determined according to A.S.T.M. methods, unless otherwise noted.

Gasoline

Prices Effective	Nov. 7	Oct. 31
OKLAHOMA		
U. S. Motor: (Octane L-3)		
62 oct. & below	3.75 – 4.50	3.75 – 4.50
63-66 oct.	4.00 – 4.625	4.00 – 4.625
67-69 oct.	4.375 – 4.875	4.375 – 4.875
70-72 oct.	4.625 – 5.375	4.625 – 5.375
60-62, 400 e.p.	4.00	4.00
WESTERN PENNA.		
Bradford-Warren:		
Motor gasoline:		
U. S. Motor (58-62°)	5.25	5.25
Min. 65 oct.	6.25 – 7.00	6.25 – 7.00
Min. 70 oct.	(e)7.00	(e)7.00
"Q" gasoline	(e&g)7.00	(e&g)7.00
Other districts:		
Motor gasoline:		
U. S. Motor (58-62°)	4.75 – 5.00	5.00
Min. 65 oct.	(f)	6.25 – 6.75
"Q" gasoline	(g) 6.50 – 6.75	(g) 6.75 – 7.00

Prices Effective	Nov. 7	Oct. 31
CENTRAL MICHIGAN (a)		
Str.-Run Gasoline	(c) 4.50 – 5.00	(c) 4.50 – 5.25
U. S. Motor: (Octane L-3)		
67-69 octane	(e)7.25	(e)7.25
70-72 octane	7.75 – 8.00	7.75 – 8.25
CALIFORNIA (3c tax to be added if used in state)		
U. S. Motor:		
54-58, for instate shipment	6.50 – 9.25	6.50 – 9.25
54-58, for outside state shipment	6.00 – 9.00	6.50 – 9.00
58-61, 375-400 e.p., 65 oct. & above	7.75 – 9.75	7.75 – 9.75
N. TEX. (b)		
U. S. Motor: (Octane L-3)		
62 oct. & below	4.00 – 4.50	4.00 – 4.50
63-66 oct.	4.25 – 5.00	4.25 – 5.00
67-69 oct.	4.50 – 5.00	4.50 – 5.00
70-72 oct.	4.875 – 5.375	4.875 – 5.375
60-62, 400 e.p.	4.00	4.00
KANSAS (For Kansas destinations only)		
U. S. Motor: (Octane L-3)		
62 oct. & below	4.00 – 4.25	4.00 – 5.00
70-72 oct.	4.875 – 5.125	4.875 – 5.875

Prices Effective	Nov. 7	Oct. 31
W. TEX. (b)		
U. S. Motor: (Octane L-3)		
62 oct. & below	4.00 – 4.50	4.00 – 4.50
63-66 oct.	4.375 – 4.75	4.375 – 4.75
67-69 oct.	4.625 – 5.125	4.625 – 5.125
70-72 oct.	4.875 – 5.00	4.875 – 5.50
E. TEX.		
60-62 400 e.p.	4.00 – 4.50	4.50
N. LA (For shipment to La. & Ark.)		
U. S. Motor: (Octane L-3)		
62 oct. & below	4.375 – 4.75	4.375 – 4.75
63-66 oct.	(e)4.625	(e)4.625
67-69 oct.	(e)4.875	(e)4.875
70-72 oct.	5.50	5.50
ARKANSAS (F.o.b. Ark. plant of one refiner, for shipment to Ark. & La.)		
U. S. Motor: (Octane L-3)		
62 octane & below	4.25	4.25
67-69 oct.	5.125	5.125
OHIO (Quotations of S. O. Ohio. Delivered anywhere in Ohio).		
U. S. Motor	7.375	7.375
Above 65 oct.	7.625	7.625

(a) Prices f.o.b. Central Michigan refinery group basis, for shipment within Mich. Shipments may originate at plants outside Central group. (b) For shipment to Texas and New Mexico destinations; Group 3 prices quoted on northern shipments. (c) Excluding Detroit shipment. (d) Nominal. (e) One refiner quoting. (f) No price reported. (g) To resellers holding licenses. (h) Two refiners quoting.

MID-WESTERN TANK CAR MARKET

Prices in this Midwestern Tank Car Market table are gathered from refiners and tank car marketers or brokers from their offices located in Chicago and the surrounding territory. While the prices are quoted on a Group 3 (Oklahoma) freight rate basis, this is in accordance with the custom of the oil industry which uses Group 3 as a price basis for the ease of comparing prices even when the material originates in another refining district. Generally when prices are quoted in this Chicago market, the origin of the material is not known at the time the quotation is given, oftentimes even with the quoting refiners who have refineries in more than one refining district. All other gasoline prices are given by and for the particular refining district where the material is made and from which it is shipped.

Gasoline

Prices Effective	Nov. 7	Oct. 31
U. S. Motor: (Octane L-3)		
62 oct. and below	3.50 – 4.00	3.50 – 4.00
63-66 oct.	3.75 – 4.625	3.75 – 4.625
67-69 oct.	4.00 – 4.75	3.875 – 4.75
70-72 oct.	4.125 – 4.875	4.125 – 4.875

Kerosine

41-43 w.w.	3.75 – 4.25	3.75 – 4.25
42-44 w.w.	3.75 – 4.375	3.75 – 4.375

(a) Nominal.

Fuel and Gas Oils

Prices Effective	Nov. 7	Oct. 31
No. 1 p.w.	3.625 – 3.875	3.625 – 3.875
No. 1 straw	3.625 – 3.75	3.625 – 3.75
No. 2 straw	3.50 – 3.625	3.50 – 3.625
No. 3	3.25 – 3.375	3.25 – 3.50
No. 5	(a) $0.60 – $0.70	(a) $0.60 – $0.70

Prices Effective	Nov. 7	Oct. 31
No. 6	(a) $0.35 – $0.50	(a) $0.35 – $0.50
U. G. I. gas oil	(a) 2.875 – 3.00	(a) 2.875 – 3.00
Range oil	3.75 – 4.00	3.75 – 4.00

Naphtha and Solvent

Stoddard solvent	5.875	5.875
Cleaners naphtha	6.375	6.375
V. M. & P. naphtha	6.375	6.375
Mineral spirits	5.375	5.375
Rubber solvent	6.375	6.375
Lacquer diluent	7.375	7.375

Daily range of gasoline prices as reported in PLATT'S OILGRAM (Week Ended Nov. 4, 1938)

U. S. Motor, (Octane Number determined according to L-3 Method in Okla., Texas and Mid-Western Districts):	Oct. 31	Nov. 1	Nov. 2	Nov. 3	Nov. 4
62 octane and below:					
Oklahoma	3.75 – 4.50	3.75 – 4.50	3.75 – 4.50	3.75 – 4.50	3.75 – 4.50
(b) North Texas	4.00 – 4.50	4.00 – 4.50	4.00 – 4.50	4.00 – 4.50	4.00 – 4.50
West Texas	4.00 – 4.50	4.00 – 4.50	4.00 – 4.50	4.00 – 4.50	4.00 – 4.50
Mid Western (Group 3 basis)	3.50 – 4.00	3.50 – 4.00	3.50 – 4.00	3.50 – 4.00	3.50 – 4.00
63-66 octane:					
Oklahoma	4.00 – 4.625	4.00 – 4.625	4.00 – 4.625	4.00 – 4.625	4.00 – 4.625
(b) North Texas	4.25 – 5.00	4.25 – 5.00	4.25 – 5.00	4.25 – 5.00	4.25 – 5.00
West Texas	4.375 – 4.75	4.375 – 4.75	4.375 – 4.75	4.375 – 4.75	4.375 – 4.75
Mid-Western (Group 3 basis)	3.75 – 4.625	3.75 – 4.625	3.75 – 4.625	3.75 – 4.625	3.75 – 4.625
67-69 octane:					
Oklahoma	4.375 – 4.875	4.375 – 4.875	4.375 – 4.875	4.375 – 4.875	4.375 – 4.875
(b) North Texas	4.50 – 5.00	4.50 – 5.00	4.50 – 5.00	4.50 – 5.00	4.50 – 5.00
West Texas	4.625 – 5.125	4.625 – 5.125	4.625 – 5.125	4.625 – 5.125	4.625 – 5.125
Mid-Western (Group 3 basis)	3.875 – 4.75	3.875 – 4.75	3.875 – 4.75	4.00 – 4.75	4.00 – 4.75
70-72 octane:					
Oklahoma	4.625 – 5.375	4.625 – 5.375	4.625 – 5.375	4.625 – 5.375	4.625 – 5.375
(b) North Texas	4.875 – 5.375	4.875 – 5.375	4.875 – 5.375	4.875 – 5.375	4.875 – 5.375
West Texas	4.875 – 5.50	4.875 – 5.50	4.875 – 5.50	4.875 – 5.00	4.875 – 5.00
Mid-Western (Group 3 basis)	4.125 – 4.875	4.125 – 4.875	4.125 – 4.875	4.125 – 4.875	4.125 – 4.875
Motor Gasoline, 60-64 octane:					
New York harbor	(a) 6.00 – 6.75	(a) 6.00 – 6.75	(a) 6.00 – 6.75	(a) 6.00 – 6.75	(a) 6.00 – 6.75
Philadelphia district	(a) 6.00 – 6.50	(a) 6.00 – 6.50	(a) 6.00 – 6.50	(a) 6.00 – 6.50	(a) 6.00 – 6.50
Baltimore district	(a) 6.00 – 6.50	(a) 6.00 – 6.50	(a) 6.00 – 6.50	(a) 6.00 – 6.50	(a) 6.00 – 6.50
Motor Gasoline, 65 octane & above:					
New York harbor	(a) 6.00 – 6.75	(a) 6.00 – 6.75	(a) 6.00 – 6.75	(a) 6.00 – 6.75	(a) 6.00 – 6.75
Philadelphia district	6.25 – 6.50	(a) 6.25 – 6.50	(a) 6.25 – 6.50	(a) 6.25 – 6.50	(a) 6.25 – 6.50
Baltimore district	6.25 – 6.50	(a) 6.25 – 6.50	(a) 6.25 – 6.50	(a) 6.25 – 6.50	(a) 6.25 – 6.50
U. S. Motor, 58-62°:					
Bradford-Warren (Western Penna.)	5.25	5.25	5.25	5.25	5.25
Other districts (Western Penna.)	5.00	4.75 – 5.00	4.75 – 5.00	4.75 – 5.00	4.75 – 5.00
Motor Gasoline, Min. 65 octane:					
Bradford-Warren (Western Penna.)	6.25 – 7.00	6.25 – 7.00	6.25 – 7.00	6.25 – 7.00	6.25 – 7.00
Other districts (Western Penna.)	6.25 6.75	6.25 – 6.75	6.25 – 6.75	6.25	6.25
Motor Gasoline, Min. 70 octane:					
Bradford-Warren (Western Penna.)	(c)7.00	(c)7.00	(c)7.00	(c)7.00	(c)7.00
"Q" Gasoline:					
Bradford-Warren (Western Penna.)	(c&d)7.00	(c&d)7.00	(c&d)7.00	(c&d)7.00	(c&d)7.00
Other Districts (Western Penna.)	(d) 6.75 – 7.00	(d) 6.75 – 7.00	(d) 6.75 – 7.00	(d)6.75	(d)6.75

(a) Nominal. (b) For shipment to Texas and New Mexico destinations; Group 3 prices are quoted on northern shipment. (c) One refiner quoting. (d) To resellers holding licenses.

TANK WAGON MARKETS

Tank car, tank wagon, dealer, and service station prices for gasoline **do not include taxes;** *they do, however, include inspection fees as shown in general footnote. Gasoline taxes, shown in separate column, include* 1c *federal, and state taxes; also city and county taxes as indicated in footnotes. Kerosine tank wagon prices also do not include taxes; kerosine taxes, where levied, are indicated in footnotes. Discounts to various classes of buyers also are shown in footnotes. These prices in effect Nov. 7, 1938, as posted by principal marketing companies at their headquarters offices, but subject to later correction.*

S. O. New Jersey

Essolene
(Regular Grade)

	Consumer Tank Car	Dealer T.W.	Gasoline Taxes	Kerosine T.W.
*Atlantic City, N. J.	6.9	8.9	4	8
*Newark, N. J.	6.9	8.9	4	8
Annapolis, Md.	7.85	9.35	5	9.5
Baltimore, Md.	7.25	8.75	5	8.5
Cumberland, Md.	8.65	11.15	5	10
Washington, D. C.	7.5	9	3	9.5
Danville, Va.	8.45	10.95	6	12.9
Norfolk, Va.	7.25	9.75	6	11.5
Petersburg, Va.	7.55	10.05	6	11.7
Richmond, Va.	7.55	10.05	6	11.7
Roanoke, Va.	8.75	11.25	6	11
Charleston, W. Va.	8.05	10.55	6	12.6
Parkersburg, W. Va.	7.35	9.35	6	11.2
Wheeling, W. Va.	8.35	10.25	6	12.2
Charlotte, N. C.	8.65	11.15	7	12.1
Hickory, N. C.	9.15	11.65	7	12.5
Mt. Airy, N. C.	8.95	11.45	7	12.3
Raleigh, N. C.	8.25	10.75	7	11.6
Salisbury, N. C.	8.75	11.25	7	12.2
Charleston, S. C.	7.25	9.75	7	10.6
Columbia, S. C.	8.25	10.75	7	11.6
Spartanburg, S. C.	8.95	11.45	7	12.4

Discount to undivided dealers, except in Atlantic City and Newark, N. J., which see in "Note" below: Dealer t.w. price less 0.5c per gal.

*Effective Sept. 26, 1938, S. O. New Jersey posted a minimum retail resale price of 11.4c thru New Jersey, except Trenton area and Cumberland county.

Note: While the above posted prices continue at Atlantic City and Newark, N. J., dealers will pay a net price of 8.4c per gal. for Essolene. Dealers having pumps marked only Esso, Essolene and "Standard" White gasoline will pay 7.9c per gal. for Essolene.

Price basis to commercial consumers: To contract accounts, purchasing at least one full compartment at a time by hose connection: Effective March 12, 1937, in New Jersey, and March 8 in Maryland, District of Columbia, and in Arlington and Fairfax Counties in Virginia, on yearly purchases: from 2,500 to 100,000 gals., consumer t.w. price at time and place of delivery; 100,000 gals. per year consumer tank car price, plus 0.5c per gal. Generally consumer t.w. price in foregoing states is equivalent of dealer t.w. price, less 0.5c per gal.

Effective May 15, 1937, on Essolene and Esso (by tank wagon) in North and South Carolina, West Virginia and Virginia (except Arlington and Fairfax Counties, which see above), commercial consumers taking deliveries of 50 gals. (West Va. 100 gals.) or more at one time will be billed at the posted consumer t.w. price. Deliveries less than 50 gals. (West Va. 100 gals.) will be billed at 4c per gal. over posted consumer t.w. price. Generally, posted consumer t.w. price will be equivalent to the dealer price less 0.5c per gal.

Kerosine Discount: 1c off t.w. price for 25 gals., or more, under contract thru territory (Baltimore City contract not necessary) except no discount in state of New Jersey.

Socony-Vacuum Oil Co., Inc.

(S. O. New York Division)
Socony Mobilgas
(Regular Grade)

	Consumer Tank Car	"Split" Dealer T.W.	Gasoline Taxes	Kerosine T.W.
Metropolitan N. Y. City: Boroughs of Manhattan, Bronx and Brooklyn (Kings and Queens)	7.25	8.9	*5	8
Borough of Richmond (Staten Is.)	7.25	8.9	*5	8
Albany, N. Y.	7.3	9.3	5	8
Binghamton, N. Y.	8.5	10	5	9
Buffalo, N. Y.	7.6	7.9	5	7.5
Jamestown, N. Y.	7.3	9.3	5	8.25
Plattsburg, N. Y.	7.8	9.8	5	9
Rochester, N. Y.	8.2	9	5	8.5
Syracuse, N. Y.	7.9	9	5	8.5
Danbury, Conn.	7.6	9.6	4	9
Hartford, Conn.	7.4	9	4	7
New Haven, Conn.	7.3	8.8	4	6
Bangor, Me.	7.75	8.5	5	9
Portland, Me.	7.25	9	5	8.75
Boston, Mass.	7	8.5	4	7.5
Concord, N. H.	8.1	9.7	5	9
Lancaster, N. H.	9	11.2	5	10.25
Manchester, N. H.	7.8	9.5	5	8.5
Providence, R. I.	7	8.5	4	7.5
Burlington, Vt.	7.65	9.7	5	9.5
Rutland, Vt.	8	10	5	8

*Plus 2% city sales tax computed at time of each sale.

Discount to undivided dealers: 0.5c less than "split" dealer t.w.

Price basis to commercial consumers: Effective about Nov. 15, 1936 in New York and New England for tank wagon delivery: monthly purchases of 25,000 gals. or over, pay consumer tank car price at point of delivery, plus 0.5c gal.; monthly purchases of 5,000 to 25,000 gals., pay undivided dealer tank wagon price at point of delivery; monthly purchases of less than 5,000 gals., pay divided dealer tank wagon price at point of delivery. Private consumers pay undivided dealer tank wagon price at point of delivery, plus 2c gal.

Atlantic Refining

Atlantic White Flash Gasoline
(Regular Grade)

	Commercial Tank Car	Dealer T.W.	Gasoline Taxes	Kerosine T.W.
Philadelphia, Pa.	7	8	5	10
Pittsburgh	8	8.5	5	10.5
Allentown	7.5	9	5	10.5
Erie	8	9	5	10
Scranton	6.9	7.4	5	10.5
Altoona	8	10	5	10.5
Harrisburg	7.5	9	5	10.5
Williamsport	7.5	9	5	10.5
Dover, Del.	...	7.5	5	10.5
Wilmington	...	8.5	5	9.75
Boston, Mass.	...	8.5	4	8
Springfield, Mass.	...	9	4	8
Worcester, Mass.	...	9	4	8
Fall River, Mass.	...	8.5	4	8
Hartford, Conn.	...	9	4	7
New Haven, Conn.	...	8.8	4	7
Providence, R. I.	...	8.5	4	8
Atlantic City, N. J.	...	8.4	4	8
Camden, N. J.	...	7.9	4	8
Trenton, N. J.	...	8.4	4	8
Annapolis, Md.	...	9.35	5	9.5
Baltimore, Md.	...	8.75	5	8.5
Hagerstown, Md.	...	9.85	5	10
Richmond, Va.	...	10.05	6	11.7
Wilmington, N. C.	...	9.85	7	10.8
Brunswick, Ga.	...	9	7	*10.5
Jacksonville, Fla.	...	9	8	10

*Georgia has kerosine tax of 1c per gal., not included in above price.

Discount to undivided dealers: Dealer t.w. less 0.5c per gal. except in Georgia and Florida, dealer t.w. and undivided dealer price is same.

Price basis to commercial consumers: consumers under contract, in Penna. and Delaware, effective Mar. 11, 1937, on yearly gasoline purchases taking full compartment hose deliveries, using 100,000 gals. or more per year, tank car price plus 0.5c per gal.; consumers taking less than 100,000 gals., undivided dealer price. Consumers under contract and not under contract, taking less than full compartment delivery, and consumers not under contract taking full compartment delivery, get divided dealer price. Consumers taking less than 25 gals., t.w. delivery, get 4c above undivided dealer price.

Discount on kerosine: Effective Oct. 29, 1936, in Pennsylvania and Delaware, 2c per gal. off t.w. price on t.w. deliveries of 25 gals. or more at one time.

S. O. Ohio

Sohio X-70 Gasoline
(Regular Grade)

	Consumer T.W.	†Divided Dlr.	Gasoline Taxes	Kerosine T.W.
Ohio Statewide	11	10	5	*12
Counties where some prices are below statewide: Butler, Clark, Clinton, Columbiana, Defiance, Greene, Pickaway, Preble and Warren:	10.5	9.5	5	....
Fairfield, Franklin, Montgomery and Paulding:	10	9	5	....
Hamilton	11	9	5	....
Knox	10.5	9	5	....

Renown Gasoline
(Third Grade)

Ohio Statewide	10.5	9.5	5	....
Counties where some prices are off statewide: Clark, Columbiana, Defiance, Montgomery and Pickaway	10	9	5	....
Clermont, Darke, and Miami:	11	9.5	5	....
Fairfield, Franklin and Paulding:	9.5	8.5	5	....
Hamilton	11	9	5	....
Knox	10	8.5	5	....

S. O. Ohio Cont'd

Kerosine Prices
(Off Statewide Level)

Kerosine prices are off statewide level in the following counties:

Allen, Auglaize, Champaign, Columbiana, Darke, Geauga, Greene, Hardin, Logan, Mahoning, Mercer, Preble, Putnam, Shelby, Trumbull and Van Wert *11.5
Paulding *11
Ashtabula *10.5
Fayette, Madison, Pickaway, Portage and Summit *8.5

†This price also to authorized agents, exclusive of 0.5c rental. Discount to undivided dealers: 0.5c less than divided dealer t.w.

*Ohio has kerosine tax of 1c per gal., not included in above prices.

Commercial Tank Wagon O. D. A. to contract accounts: Effective Oct. 20, 1937, thru Ohio (except in 33 counties), on monthly purchases, off posted consumer t.w. price: 0 to 999 gals., 0.5c; 1,000 to 19,999 gals., 1.5c; 20,000 gals. and over, 2.5c. The 30 counties where O.D.A. differs from statewide are: Allen, Ashtabula, Auglaize, Butler, Champaign, Columbiana, Cuyahoga, Darke, Defiance, Erie, Fulton, Geauga, Hamilton, Hancock, Hardin, Henry, Highland, Logan, Lorain, Lucas, Mahoning, Mercer, Ottawa, Paulding, Putnam, Sandusky, Scioto, Shelby, Trumbull, Van Wert, Williams and Wood.

Sales tax: Ohio's 3% sales tax, effective Jan. 27, 1935, is added "where assessable, to regular posted prices," S. O. Ohio says.

On kerosine, prices to resellers and commercial consumers are posted generally at 3c per gal. below consumer t.w. price in any quantity, when such prices are on statewide level.

S. O. Kentucky

Crown Gasoline
(Regular Grade)

	Consumer T.W.	Net Dlr.	Gasoline Taxes	Kerosine T.W.
Covington, Ky.	12	9	6	9.5
Lexington, Ky.	13.5	10.5	6	10
Louisville, Ky.	11.5	8.5	6	9
Paducah, Ky.	12	9	6	9
Jackson, Miss.	12.5	9.5	7	*9
Vicksburg, Miss.	12.5	9.5	7	*8.5
Birmingham, Ala.	13	10	*8	9.5
Mobile, Ala.	12	9	*9	8.5
Montgomery, Ala.	12	10	*9	9.5
Atlanta, Ga.	13.5	10.5	7	*9
Augusta, Ga.	13	10	7	*9
Macon, Ga.	13	10	7	*10
Savannah, Ga.	12	9	7	*8
Jacksonville, Fla.	12	9	8	8
Miami, Fla.	12	9	8	8
Pensacola, Fla.	12	9	*9	8
Tampa, Fla.	12	9	8	8

Kyso Gasoline
(Third Grade)

Covington, Ky.	10.5	8	6	....
Lexington, Ky.	12	9.5	6	....
Louisville, Ky.	10	7.5	6	....
Paducah, Ky.	10.5	8	6	....
Jackson, Miss.	10.5	8	7	....
Vicksburg, Miss.	10.5	8	7	....
Birmingham, Ala.	11	8.5	*8	....
Mobile, Ala.	10	7.5	*9	....
Montgomery, Ala.	11	8.5	*9	....
Atlanta, Ga.	11	8.5	7	....
Augusta, Ga.	11	8.5	7	....
Macon, Ga.	11	8.5	7	....
Savannah, Ga.	10	7.5	7	....
Jacksonville, Fla.	10.5	8	8	....
Pensacola, Fla.	10	7.5	*9	....
Tampa, Fla.	10.5	8	8	....

Discounts to all tank wagon consumers: Effective Jan. 4, 1937, thru territory, on Crown gasoline, 3c per gal. below consumer t.w. price; on Kyso, 2.5c below, regardless of quantity purchased, per month

**Taxes*: In the tax column is included these city and county gasoline taxes at the following points: Mobile, 2c city; Birmingham, 1c city; Montgomery 1c city and 1c county; Pensacola, 1c city. Georgia and Montgomery, Ala. have kerosine taxes of 1c per gal., and Mississippi 0.5c, not included in above prices.

Above prices include these inspection fees on both gasoline and kerosine, per gallon, figured on basis of 50 gallons per barrel:
Alabama, 1/40c on gasoline, 1/2c on kerosine; Arkansas, 1/5c per gal. in a single barrel, 1/20c per gal. in bulk; Florida, 1/8c; Illinois, 3/100c; Indiana, 1/5c per gal. in lots up to 25 bbls.; 2/25c per gal. in lots of 25 bbls. or more; Kansas, 1/50c, (3/50c can be charged to meet inspection department expenses); Louisiana, 1/32c; Minnesota, 1/25c; Missouri, 3/100c; Nebraska, 3/100c; Nevada, gasoline, 1/20c; North Carolina, 1/4c; North Dakota, 1/20c; Oklahoma, 2/25c per gal. lots of more than 50 in bbls., 1/5c in lots less than 50 bbls.; South Carolina, 1/8c; South Dakota, 1/10c; Tennessee, 2/5c; and Wisconsin, 3/100c on gasoline, 1/25c on kerosine.
Kerosine inspection fee only: Iowa, 3/50c; Michigan, 1/5c per gal.

TANK WAGON MARKETS

Tank car, tank wagon, dealer, and service station prices for gasoline do not include taxes; they do, however, include inspection fees as shown in general footnote Gasoline taxes shown in separate column, include 1c federal, and state taxes; also city and county taxes as indicated in footnotes. Kerosine tank wagon prices also do not include taxes; kerosine taxes, where levied, are indicated in footnotes. Discounts to various classes of buyers also are shown in footnotes. These prices in effect Nov. 7, 1938, as posted by principal marketing companies at their headquarters offices, but subject to later correction.

S. O. Indiana

Red Crown (*Regular Grade*)
Stanolind (*Third Grade*)

	Red Crown Cons. T.W.	Dealer Prices Red Crown	Stano-lind	Gaso-line Taxes	Kero-sine T.W.
Chicago, Ill.	11.1	8.1	6.4	4	10
Decatur, Ill.	11.1	8.6	8	4	10
Joliet, Ill	11.1	9.6	8.4	4	10
Peoria, Ill.	11.1	9.6	9.1	4	10
Quincy, Ill.	10.9	8.9	8	4	9.8
Indianapolis, Ind.	11.8	10.3	8.9	5	*9.5
Evansville, Ind.	11.6	10.1	9.1	5	*10.5
South Bend, Ind.	12.1	10.6	9.2	5	*9
Detroit, Mich.	10.3	8.8	7.5	4	9
Grand Rapids, Mich.	10.8	9.5	8	4	9.7
Saginaw, Mich.	11.8	10.3	9.3	4	9.3
Green Bay, Wis.	11.9	10.4	9.9	5	10.3
Milwaukee, Wis.	11.3	9.8	9.3	5	10.2
La Crosse, Wis.	11.5	10	9.5	5	10.4
Minneapolis-St. Paul	11.5	9.5	9	5	10.4
Duluth, Minn.	11.9	10.4	9.9	5	10.8
Mankato, Minn.	11.5	10	9.5	5	10.4
Des Moines, Ia.	10.9	9.4	7.5	4	*9.8
Davenport, Ia.	11.1	9.6	9.1	4	*10
Mason City, Ia.	11.3	9.8	9.3	4	*10.2
St. Louis, Mo.	10.7	9.2	7.5	*4	9.6
Kansas City, Mo.	10.4	8.9	6.9	*4	7.5
St. Joseph, Mo.	10.4	8.9	8.4	*4	9.3
Fargo, N. D.	12.7	11.2	10.7	4	11.6
Minot, N. D.	14	12.5	12	4	12.9
Huron, S. D.	12	10.5	10	5	10.9
Wichita, Kans.	9.9	6.6	5.5	4	7.8

*Taxes: in the tax column is included these city and state gasoline taxes at following points: Kansas City, St. Joseph and St. Louis, 1c city tax. Kerosine taxes: Indiana has 4c, Iowa 3c per gal. state tax, not included in above prices.

Discount to commercial consumers: Effective Jan. 1, 1935, thru territory, except Michigan effective Feb. 1, on purchases per month, discount off t.w. prices; all gasolines, 25 to 1,000 gals., at t.w. price; 1,000 gals., or more, 1.5c off t.w. on Ethyl and Red Crown, and 1c on Stanolind (latter effective June 9, 1937). Minimum delivery is 25 gals.

S. O. Nebraska

Standard Red Crown Gasoline
(*Regular Grade*)

	T.W.	Dealer	Gaso-line Taxes	Kero-sine T.W.
Omaha, Neb.	11.5	10	6	10.3
McCook	11.5	9.5	6	10
Norfolk	11.9	8.9	6	10.7
North Platte	12.3	9.4	6	11
Scottsbluff	13	7.9	6	11.8

Discounts to commercial consumers: for tank wagon deliveries covered only by Standard Commercial Consumer Contract, effective January 1, 1935.

S. O. Louisiana

Essolene
(*Regular Grade*)

	Consumer Tank Car	Dealer T.W.	Gaso-line Taxes	Kero-sine T.W.
Little Rock, Ark.	7.25	9.75	7.5	11
Alexandria, La.	6.75	9.25	8	*11.5
Baton Rouge, La.	6.75	9.25	8	* 9.5
New Orleans, La.	6.75	9.25	*10	* 9
Lake Charles, La.	6.75	9.25	8	*11.5
Shreveport, La.	5.5	8	8	*10
Lafayette, La.	7	9.5	8	*11.5
Bristol, Tenn.	10.25	11	8	14.5
Chattanooga, Tenn.	9.5	12	8	14
Knoxville, Tenn.	10	12.5	8	14.5
Memphis, Tenn.	8	10.5	8	12.5
Nashville, Tenn.	9	11.5	8	12

*Taxes: New Orleans gasoline tax includes 7c state, 1c federal, and 2c parish tax. Louisiana has kerosine tax of 1c per gal.; in addition New Orleans has 1c parish tax, none of which are included in above prices.

Price basis to dealers: Undivided dealers get dealer price, less 0.5c.

Price basis to commercial consumers: Effective May 15, 1937, thru territory; commercial consumers taking 50 gals. or more at one time will be billed at posted consumer t.w. price; those taking less than 50 gals. at one time will be billed at 4c per gal. over posted consumer t.w. price. Generally, the posted consumer t.w. price will be equivalent to the dealer price less 0.5c per gal.

Humble Oil & Refining Co.

Humble Motor Fuel
(*Regular Grade*)

	*T.W.	S.S.	Gaso-line Taxes	Kero-sine T.W.
Dallas, Tex.	8	12	5	8
Ft. Worth, Tex.	9	13	5	8
Houston, Tex.	9.5	13.5	5	8
San Antonio, Tex.	9	13	5	8

U. S. Motor Gasoline
(*Third Grade*)

	*T.W.	S.S.	Gaso-line Taxes
Dallas, Tex.	6	8	5
Ft. Worth, Tex.	7	10	5
Houston, Tex.	7	11.5	5
San Antonio, Tex.	8	10.5	5

*Price is t.w. price to all classes of dealers and consumers.

Continental Oil

Conoco Bronze (*Regular Grade*)
Demand (*Third Grade*)

	—Dealer Prices— Conoco Bronz-a-z	De-mand	Gaso-line Taxes	Kero-sine T.W.
Denver, Colo.	10.5	9.5	5	11.5
Grand Junc., Colo.	14	13	5	15
Pueblo, Colo.	11.5	10.5	5	10.5
Casper, Wyo.	12	11	5	11.5
Cheyenne, Wyo.	8	7	5	13
Billings, Mont.	13	10	6	13
Butte, Mont.	13.5	10.5	6	15.5
Great Falls, Mont.	13	11	6	15.5
Helena, Mont.	14	13	6	15.5
Salt Lake City, Utah	12	10	5	16
Boise, Ida.	13	10.5	6	18
Twin Falls, Ida.	15	12.5	6	18
Albuquerque, N. M.	11	10	†6.5	12
Roswell, N. M.	11	8.5	†6.5	10.5
Santa Fe, N. M.	12	9.5	*7	12
Muskogee, Okla.	9.5	7	5	7
Oklahoma City, Okla.	8.5	6.5	5	7
Tulsa, Okla.	7	5	5	6
Ft. Smith, Ark.	9.25	6.25	5	7.5
Little Rock, Ark.	9.25	7.625	7.5	8
Texarkana, Ark.	9	7	5	8

†Includes city tax of 0.5c.
*Includes 1c city tax.

S. O. California

Standard Gasoline
(*Regular Grade*)

	T.W.	S.S.	Gaso-line Taxes	Kero-sine T.W.
San Francisco, Cal.	13.5	14.5	4	11.5
Los Angeles, Cal.	13	14	4	10
Fresno, Cal.	14.5	15.5	4	12.5
Phoenix, Ariz.	15.5	16.5	6	*12.5
Reno, Nev.	15.5	16.5	5	13.5
Portland, Ore.	14	15	6	13.5
Seattle, Wash.	14	15	6	13.5
Spokane, Wash.	17	18	6	16.5
Tacoma, Wash.	14	15	6	13.5

Flight Gasoline
(*Third Grade*)

San Francisco, Cal.	12	13	4	....
Los Angeles, Cal.	11.5	12.5	4	....
Fresno, Cal.	13	14	4	....
Reno, Nev.	14	15	5	....
Phoenix, Ariz.	14	15	6	....
Portland, Ore.	12.5	13.5	6	....
Seattle, Wash.	12.5	13.5	6	....
Spokane, Wash.	15.5	16.5	6	....
Tacoma, Wash.	12.5	13.5	6	....

*Arizona has kerosine tax of 5c per gal., not included in above prices.

Discount to dealers: on gasoline, off t.w. price on Standard Ethyl and Standard Gasoline, to 100% dealers, 3c; to split dealers, 2c; on Flight gasoline, both 100% and split dealers, 2c.

On Stanavo Aviation Gasoline, to all classes of dealers, 3c off t.w.

To commercial consumers: off tank wagon price: on single deliveries of 40 gallons and over, Stanavo Aviation, Standard Ethyl and Standard Gasolines, 3c. Flight Gasoline, 2c per gallon. Tank wagon delivery, less than 40 gals., 1c per gal. above posted t.w. price. Discounts on kerosine: in tank cars, 3c off tank truck price; plant deliveries to jobbers, 2.5c below tank truck price.

Canada

PRICES OF IMPERIAL OIL LTD.
Per Imperial Gallon, which is 1.2 U. S. Gallons
3-Star Imperial Gasoline
(*Regular Grade*)

	T.W	Gasoline Taxes	Kero-sine T.W.
Hamilton, Ont.	15	6	15.5
Toronto, Ont.	15	6	15.5
Brandon, Man.	21.1	7	22.3
Winnipeg, Man.	20.5	7	20.7
Regina, Sask.	19	7	21
Saskatoon, Sask.	21.3	7	23.3
Edmonton, Alta.	19.5	7	21.5
Calgary, Alta.	16.5	7	18.5
Vancouver, B. C.	16	7	23
Montreal, Que.	14	6	14.5
St. John, N. B.	13.5	10	17.5
Halifax, N. S.	13.5	10	17.5

Discounts to undivided dealers, 1c off t.w. price, except Maritime Provinces where undivided dealers pay t.w. price. Divided dealers pay t.w. price, thru territory.

Aviation Gasoline

Following are tank car, tank wagon or dealer prices, as indicated, of aviation gasoline in several marketing territories.

S. O. OHIO
Thru Ohio
Esso Aviation

	Consumer T.W.	Gasoline Taxes
74 octane	15.5	5
80 octane	16.5	5
87 octane	17.5	5

Discounts: For delivery on contract to hangar operators and resellers: 2c below consumer posted t.w. price, shown above.

S. O. INDIANA
Stanavo Ethyl Aviation Gasoline
73 Octane Number

Chicago, Ill.	14.9	4
Detroit, Mich.	16.5	4
Milwaukee, Wis.	15.1	5
Minneapolis, Minn.	15.3	5
St. Louis, Mo.	14.5	3
Kansas City, Mo.	14.2	*4
Fargo, N. D.	16.5	4
Huron, S. D.	15.8	5

*Includes 1c city tax.

HUMBLE OIL & REFINING CO.
Aviation Gasoline

	Tank Car
Baytown, Tex.	8.5

CONTINENTAL OIL CO.
Conoco Special Gasoline

	Dealer	Gasoline Taxes
Denver, Colo.	14.5	5
Cheyenne, Wyo.	15	5
Helena, Mont.	17	6
Salt Lake City, Utah	17.5	5
Albuquerque, N. M.	14	*6.5

*Includes city tax of 0.5c.

S. O. CALIFORNIA
Stanavo Aviation Gasoline

	T.W.	
Phoenix, Ariz.	17.5	6
Los Angeles, Cal.	15	4
San Francisco, Cal.	15.5	4
Reno, Nev.	17.5	5
Portland, Ore.	16	6
Seattle, Wash.	16	6
Spokane, Wash.	19	6

Note: For discounts, etc., see note under Standard and Flight gasoline above.

Naphtha (In Tank Wagon)

S. O. NEW JERSEY

	Posted Tank Wagon Prices Mineral Spirits	V.M.&P.
Newark, N. J.	11.5	15.5
Baltimore, Md.	15.5	....
Washington, D. C.	15	....

Discounts: Buyers taking following quantities, at one time, get these discounts: Newark, 2c per gal. on 200 gals. or more; less than 200 gals., 0.5c higher price. Baltimore 2c off on 25 to 100 gals and 3c on over 100 gals. Washington, 2c off to contract buyers.

SOCONY-VACUUM OIL CO.

Buffalo, N. Y.	10.5	12
*New York City	9.5	10.5
Rochester, N. Y.	12	12
Syracuse, N. Y.	12	14.5
Boston, Mass.	11	11
Bridgeport, Conn.	11	11.5
Hartford, Conn.	10.5	11
Providence, R. I.	11	12

*Prices apply to consumers only in quantities over 1,000 gals. annually. For quantities under 1,000 gals. annually, add 0.5c per gal.

ATLANTIC REFINING CO.

Philadelphia, Pa.	11.5	12.5
Lancaster, Pa.	13	14
Pittsburgh, Pa.	12.5	14.5

Note: Prices for Mineral Spirits also apply to Stoddard Solvent; and prices for V.M.&P. Naphtha apply also to Light Cleaners Naphtha.

S. O. OHIO

	S.R. Solvent	V.M.&P. Naphtha
Thru Ohio	12.5	13.5

Note: V.M.&P. Naphtha prices also apply on Dry Cleaners naphtha and special Varnolene; Varnolene and Sohio Solvent 0.5c below these prices. Discounts to contract consumers, off t.w. price: 300 to 999 gals., 0.5c; 1,000 to 2,499 gals., 0.75c; 2,500 to 4,999 gals., 1c; 5,000 or more gals., 1.5c.

TANK WAGON MARKETS

Tank car, tank wagon, dealer, and service station prices for gasoline do not include taxes; they do, however, include inspection fees as shown in general footnote. Gasoline taxes, shown in separate column, include 1c federal, and state taxes; also city and county taxes as indicated in footnotes. Kerosine tank wagon prices also do not include taxes; kerosine taxes, where levied, are indicated in footnotes. Discounts to various classes of buyers also are shown in footnotes. These prices in effect Nov. 7, 1938, as posted by principal marketing companies at their headquarters offices, but subject to later correction.

S. O. INDIANA

(Prices include state and federal taxes)

	Oleum Spirits	V.M.&P. Naphtha	Stanisol
Chicago, Ill.	16.2	16.5	15.9
Detroit, Mich.	19.2	18.2	19.7
Kansas City, Mo.	13.9	14.9	14.4
St. Louis, Mo.	14.2	15.2	12.9
Milwaukee, Wis.	18.8	19.8	19.3
Minneapolis, Minn.	19	20	17.7

Note: All prices, with exception of Missouri points, include state tax. Prices shown are base prices, before discounts.

Naphtha (In Tank Cars)

In Tank Cars (F. o. b. refinery or seaboard terminal except Ohio, delivered price.)

	V.M.&P. Naphtha	Solvent
Baltimore	10.5	9.5
New York Harbor	10	9
Philadelphia district	10.5	9
Boston	10.5	9.5
Providence	10.5	9.5
Ohio points, delivered	8.875	*8

*This is on rubber solvent.

Note: In Ohio, prices on D.C. naphtha and special. Varnolene are same as V.M.&P.; on Varnolene and Sohio Solvent, prices are 0.5c less than on V.M.&P

Latest Changes

From Nov. 1 to Nov. 7 inclusive. Dates and amounts of changes shown. See table for full current prices.

Atlantic Refining—White Flash Gasoline:
Trenton dealer t.w. up 0.7c, Nov. 1.

S. O. Indiana—Red Crown:
Chicago metropolitan area dealer price cut 0.5c, Nov. 7.

Corrections

Notation of amount of change and dates not previously shown in table. Table in this issue is corrected to show these changes.

Socony-Vacuum Oil—Kerosine:
Rutland cut 1c, Oct. 14.

Atlantic Refining—White Flash Gasoline:
New Haven dealer t.w. cut 0.5c, Oct. 29.
Camden dealer t.w. up 0.2c, Oct. 29.

Kerosine:
Baltimore cut 0.5c, Oct. 27.

S. O. Indiana—Red Crown and Stanolind:
Minneapolis-St. Paul dealer prices cut 0.5c, Oct. 29.

Humble Oil & Refining—U. S. Motor:
San Antonio t.w. up 0.5c, Oct. 10.

Naphtha

Socony-Vacuum Oil — Mineral Spirits & V. M. & P.:
Cut 0.5c, Boston and Providence, Nov. 1.

Fuel Oil

(*Continued from page* 133)

both instate and outstate industrial centers, they said.

* * *

TULSA, Nov. 7. — Mid-Continent light fuels were reported closely held last week. Open market sales of Nos. 1 to 3 oils were more numerous, suppliers said. Bulk of movement, however, was against contracts. Quotations reported for the light grades were unchanged.

Heavy fuel movement from Mid-Continent plants was sluggish. Suppliers said they anticipated better demand in view of the general industrial business upturn.

California

LOS ANGELES, Nov. 5. — Although California bulk suppliers reported some feelers by offshore buyers interested in crude oil to gasoline, the inquiries were not firm and indications pointed to continued hesitancy on the part of buyers.

A cargo of 24.9 maximum gravity diesel oil, reported sold a week ago for Pacific foreign destination, went at a price said to be slightly under 93 cents a barrel, or not much change from the previous sale of this product to the same purchaser.

Some increase was reported in stocks of unbranded gasolines held by independent refiners. Quotations reported for refinery rack deliveries of these products moving within the state ranged from 6.75 to 7 cents, exclusive all tax, and spot quotations for shipments outside the state were reported at 6 cents and up.

Colder weather, plus brisk buying on the open market, reduced stocks of diesel oil considerably. Independent quotations on this product ranged from 2.50 cents up. Kerosine distillate was not in such good demand and current quotations were only slightly higher than those for diesel.

Wax

NEW YORK, Nov. 7. — Offerings of white crude scale wax in the coastal markets were less free at 2.35 cents the first week of November, according to reports of traders here.

Sellers here credited the tightening of this product more to the fact that the available supply from the Pennsylvania field was less, rather than to any appreciable increase in movement into channels of consumption.

Fully refined grades were without feature, with no change reported in prices.

TANK WAGON MARKETS, HEATING OILS

Prices in Effect Nov. 7, 1938

Following are posted tank wagon prices of various grades of heating oil at the points shown in various territories. Prices are in cents per gallon.

	No. 1	No. 2	No. 4
S. O. NEW JERSEY			
Atlantic City, N. J.	8.0	6.0	6.0
Newark	8.0	6.0	6.0
Annapolis, Md.	....	6.25	....
Baltimore	7.5	6.5	6.0
Washington, D. C.	7.25	6.5	6.5
Norfolk, Va.	7.0	6.0	6.0
Petersburg	7.25	6.25	....
Richmond	7.25	6.25	6.25
Charlotte, N. C.	8.75	7.75	....
Hickory	....	8.25	....
Raleigh	8.75	7.25	....
Charleston, S. C.	8.5	7.0	....
Columbia	9.5	8.0	....
Spartanburg	10.2	8.7	....
SOCONY-VACUUM OIL CO. INC. (S. O. New York Division)			
New York City	6.50	6.50	6.50
Albany, N. Y.	6.50	6.50	6.00
Rochester, N. Y.	7.50	7.50	7.50
Boston, Mass.	6.00	6.00	6.00
Bangor, Me.	7.0	7.0	7.0
Manchester, N. H.	6.50	6.50	6.50
Burlington, Vt.	8.00	8.00	8.00
Hartford, Conn.	6.00	6.00	6.00
New Haven, Conn.	5.25	5.25	5.25
Providence, R. I.	6.00	6.00	6.00

Note: Prices for No. 1 fuel in Socony-Vacuum territory same as for kerosine which see in tank wagon table for various cities; prices change with kerosine.

	No. 1	No. 2	No. 3	No. 4
ATLANTIC REFINING Cont'd				
Philadelphia, Pa.	7 75	6 00	6 00	6 00
Allentown, Pa.	8 50	6 50	6 50	6 50
Wilmington, Del.	7 75	6 00	6.00	6 00
Springfield, Mass.	8 00	6 50	....	6 50
Worcester, Mass.	8 00	6 00	....	6 00
Hartford, Conn.	7 00	6.00	....	6.00
S. O. OHIO				
Columbus Division and Cleveland	7.50	7 50	7.00	....
City of Lima	8 00	8 00	7.00	....
Rest of Ohio	8 00	8 00	7.50	....

Note: S. O Ohio prices are for full compartment hose dumps, bucket dumps are 0.5c per gallon higher.

S. O. INDIANA

Stanolex Fuel and Furnace Oils

	No. 1 Fuel	Stanolex Furnace
Chicago	(a)6.5	6.5
Indianapolis	...	(b)7.8
Detroit	...	7.1
Milwaukee	8.4	7.7
Minneapolis	7.8	7.8
St. Louis	7.7	(c)6.7
Kansas City	6.8	6.8

(a) For 400 gals. and over; 150 to 399 gals., 7c; 1 to 149 gals., 8c.
(b) Excluding 4c state tax.
(c) For 400 gals & over; 100 to 399 gals., 7c; 1 to 99 gals., 8c.
Note: Small-lot deliveries of light fuel oils range up to 2c higher than above quotations.

SEABOARD MARKETS, EXPORT AND COASTWISE

All prices on this page are publisher's opinion of open market quotations or sales, for spot shipment (10 to 15 days). In cargo markets, spot shipment is 90 days. Prices in cents per gallon, except heavy fuel oil in dollars per barrel, in tank car lots, f.o.b. refineries or seaboard terminals in districts designated, unless otherwise noted. Federal, state or municipal taxes not included. Prices quoted apply on products made from legally produced crude. Unless otherwise noted, gasoline octane ratings are determined by C.F.R. Motor method, A.S.T.M. D-357-33T; and lubricating oil specifications determined according to A.S.T.M. methods, unless otherwise noted.

Eastern Domestic

(Inter-refinery and export prices not included.)

MOTOR GASOLINE

Prices Effective	Nov. 7	
District:	(a)60-64 Oct.	(a) 65 Oct. & Above
N. Y. harbor	6.00 – 6.75	6.00 – 6.75
(b)N. Y. harbor	5.75 – 6.50	5.75 – 6.50
Philadelphia	6.00 – 6.50	6.25 – 6.50
Baltimore	6.00 – 6.50	6.25 – 6.50
Norfolk	6.50 – 7.00	6.75 – 7.25
Wilmington, N. C.	6.50 – 7.00	6.75 – 7.25
Charleston, S. C.	6.50 – 7.00	6.75 – 7.25
Savannah	6.50 – 7.00	6.50 – 7.25
Jacksonville	6.00 – 7.00	6.50 – 7.25
Portland	7.00 – 7.50	7.00 – 7.50
Boston	6.25 – 7.00	6.50 – 7.00
Providence	6.25 – 7.00	6.50 – 7.00

WATER WHITE KEROSINE

District:			
N. Y. harbor	4.50 – 4.875	Charleston	5.00–5.25
(b)N. Y. harbor	4.375– 4.75	Savannah	5.00–5.25
Philadelphia	4.75–5.00	Jacksonville	5.00–5.25
Baltimore	5.00–5.25	Portland	5.60
Norfolk	5.00–5.25	Boston	4.65–5.00
Wilmington, N.C.	5.00–5.25	Providence	4.65–5.00

(c)FUEL OILS

	N. Y. harb.	N. Y. harb. barges
No. 1	4.50 – 4.875	4.375– 4.75
Nos. 2-3	3.875– 4.25	3.625– 4.125
No. 4	3.875– 4.25	3.625– 4.125
No. 5	(s)$1.15	.....
No. 6	$0.85 –$0.95	.....

	Phila. dist.	Balt. dist.
No. 1	4.75 – 5.00	5.00 – 5.25
Nos. 2-3	4.25	4.25
No. 4	4.00	4.00 – 4.25
No. 5	$1.15	$1.15
No. 6	$0.85 –$0.95	$0.95

	Bost. dist.	Prov. dist.
No. 1	4.65 – 5.00	4.65 – 5.00
Nos. 2-3	4.00 – 4.25	4.00 – 4.25
No. 4	4.00 – 4.25	4.00 – 4.25
No. 5	$1.15	$1.15
No. 6	$0.95	$0.95

District:	(d)Bunker C Fuel	(d)Diesel Oil
N. Y. harbor	(f)$0.95	(g)$1.75
Philadelphia	(f)$0.95	(g)$1.75
Baltimore	(f)$0.95	(g)$1.75
Norfolk	(e)$0.95	$1.75
Charleston	$0.90	$1.75
Savannah	(e)$0.90	$1.785
Jacksonville	(e)$0.90	$1.785
Tampa	(e)$0.85	$1.785
Portland	$1.05	$1.85
Boston	(f)$0.95	(g)$1.75
Providence	$0.95	$1.75

	Gas Oil 28-34 Gravity	Diesel Oil Shore Plants
N. Y. harbor	4.00 – 4.25	4.00 – 4.25
Philadelphia dist.	4.25	....
Baltimore dist.	4.25	....
Norfolk dist	4.25	....
Savannah dist.	....	4.25
Jacksonville dist.	....	4.25

Pacific Export

(f) (Quotations are at seaboard, Los Angeles, in cargo lots, cents per gal., except where otherwise noted.)

Prices Effective	Nov. 7	Oct. 31
U. S. Motor, under 65 oct.	4.625– 4.75	4.625– 4.75
400 e.p. blend, under 65 oct.	4.75 – 4.875	4.75 – 4.875
400 e.p. blend 65 oct. & above	4.875– 5.00	4.875– 5.00
(h) 38-40 w.w. kerosine	4.25 – 4.75	4.25 – 4.75
41-43 w.w. kerosine	4.75 – 5.00	4.75 – 5.00
44 w.w. kerosine	5.25 – 5.50	5.25 – 5.50
In Cargo lots, per bbl.		
Dieselfuel, 24° & above	$1.05 –$1.20	$1.05 –$1.20
Diesel fuel, under 24°	$0.93 –$1.05	$0.95 –$1.05
(j) 30-34 diesel (gas oil)	$1.17 –$1.26	$1.17 –$1.26
(k) Grade C fuel oil	$0.60 –$0.70	$0.60 –$0.70

Prices Effective	Nov. 7	Oct. 31
In Ships' Bunkers, or deep tank lots, per bbl.:		
(j)Diesel fuel oil	$1.525–$1.55	$1.525–$1.55
(k)Grade C fuel oil	$0.70 –$0.90	$0.70 –$0.90
Cased Goods: (Per case)		
U. S. Motor	$1.40 –$1.525	$1.40 –$1.525
400 e.p. blend, under 65 octane	$1.50 –$1.60	$1.50 –$1.60
375-400 e.p. blend, 65 oct. & above	$1.60 –$1.70	$1.60 –$1.70
(h)40-43 w.w. kerosine	$1.30 –$1.40	$1.30 –$1.40
Kerosine, p.w.	$1.25 –$1.35	$1.25 –$1.35

New York Export

(Cents per gal. in bbls. F.a.s. New York)

CYLINDER OILS (Pennsylvania Products)

Bright stock:		
Light, 25 p.t.	21.50	21.50
Neutral oil:		
200 3 color, 25 p.t.	22.50	22.50
150 3 color, 25 p.t.	21.50	21.50
600 s.r., unfiltered	15.50 –16.50	15.50 –16.50
650 s.r., unfiltered	17.50 –18.50	17.50 –18.50
600 fl., s.r.	18.00 –19.00	18.00 –19.00
630 fl., s.r.	20.50 –21.50	20.50 –21.50

Wax, Domestic *and* Export

(A.S.T.M. Tests. Melting points, however, are A.M.P., 3° higher than E.M.P. Export prices, f.a.s., carloads. Domestic prices, f.o.b. refineries in New Orleans & New York districts in bags, carloads, with 0.2c discount allowed for shipment in bulk, except where noted below. Scale solid; fully refined, slabs in bags)

Prices Effective	Nov. 7	
	New York	
	Domestic	Export
124-6 Y.C. scale	2.35 – 2.50	2.35 – 2.50
122-4 W.C. scale	2.35 – 2.50	2.35 – 2.50
124-6 W.C. scale	2.35 – 2.50	2.35 – 2.50
123-5 Fully rfd.	3.75	3.375– 3.50
125-7 Fully rfd.	3.90	3.50 – 3.625
128-30 Fully rfd.	(l)4.00	3.65 – 3.875
130-2 Fully rfd.	(l)4.35	4.00 – 4.125
133-5 Fully rfd.	(l)4.65	4.40 – 4.625
135-7 Fully rfd.	(l)4.90	5.00 – 5.125
	New Orleans	
	Domestic	Export
124-6 Y.C. scale	2.35 – 2.50	2.35 – 2.50
122-4 W.C. scale	2.35 – 2.50	2.35 – 2.50
124-6 W.C. scale	2.35 – 2.50	2.35 – 2.50
123-5 Fully rfd.	3.75	3.375– 3.50
125-7 Fully rfd.	3.90	3.50 – 3.625
128-30 Fully rfd.	(l)4.00	3.65 – 3.875
130-2 Fully rfd.	(l)4.35	4.00 – 4.125
133-5 Fully rfd.	(l)4.65	4.40 – 4.625

Gulf Coast

(F.o.b. ship, Gulf oil terminals; minimum 20,000 bbls.; representing traders' opinions)

Prices Effective	Nov. 7	Oct. 31
For Domestic shipment:		
MOTOR GASOLINE		
59 oct. & below	(a) 4.375–4.625	(a) 4.375–4.625
60-64 oct.	4.50 – 4.75	4.50 – 4.75
65-67 octane	4.75 – 5.00	4.75 – 5.00
68-70 octane	5.00 – 5.25	5.00 – 5.25
FUEL OILS		
No. 1	3.625– 4.00	3.75 – 4.00
No. 2	3.375– 3.50	3.50
KEROSINE		
41-43 w.w.	3.875– 4.125	3.875– 4.125

For Export Shipment:	Nov. 7	Oct. 31
GASOLINE		
U. S. Motor Gasoline, no octane guarantee	(n)	4.25 – 4.75

Gasoline:	60-62, 400 e.p.	61-63, 390 e.p.	64-66, 375 e.p.
	Nov. 7		
60 octane	4.375–4.50	4.375–4.50	4.375–4.50
61 octane	4.375–4.50	4.375–4.50	4.375–4.50
62 octane	4.375–4.50	4.375–4.50	4.375–4.50
63 octane	4.375–4.50	4.375–4.50	4.375–4.50
64 octane	4.375–4.50	4.375–4.50	4.375–4.50
65 octane	4.625–4.75	4.625–4.75	4.625–4.75
66 octane	4.625–4.75	4.625–4.75	4.625–4.75
67 octane	4.625–4.875	4.625–4.875	4.625–4.875
68 octane	4.875–5.125	4.875–5.125	4.875–5.125
69 octane	(n)	(n)	(n)
70 octane	4.875–5.625	4.875–5.625	4.875–5.625
71 octane	(n)	(n)	(n)

Prices Effective	Nov. 7	Oct. 31
For Export Shipment:		
KEROSINE		
44 w.w.	(a) 4.125– 4.25	(a) 4.125– 4.25
41-43 w.w.	3.875– 4.125	3.875– 4.125
41-43 p.w.	3.875– 4.125	3.875– 4.125
GAS AND BUNKER OILS		
For Export Shipment		
Gas Oil (m):		
Below 43 diesel index	3.375– 3.50	3.50
43-47 diesel index	3.375– 3.50	3.50 – 3.625
48-52 diesel index	(a) 3.50 –3.625	(a) 3.50 –3.625
53-57 diesel index	(a) 3.625–3.75	(a) 3.625–3.75
For Domestic or Export Shipment		
Diesel Oil Ship's bkrs.	(o)$1.55	(o)$1.55
Grade C bunker oil for ship's bunkers	(o)$0.75	(o)$0.75
Grade C bunker oil, in cargoes	$0.62 –$0.65	$0.60 –$0.65

MID-CONTINENT LUBRICATING OILS

(Cents per gal. at Gulf; in bbls., f.a.s.; in bulk, f.o.b. terminals)

	Nov. 7	
	(p)Barrels	Bulk
190-200 vis. D. 210 brt. stock	22.50 –24.50	17.60 –17.75
150-160 vis. D 210 brt. stock:		
0-10 p.p.	19.00 –20.50	13.00 –14.75
10-25 p.p.	18.50 –20.00	12.50 –14.25
150-160 vis. E 210 brt. stock	18.50 –20.00	13.00 –14.50
120 vis. D 210 brt. stock	18.50 –20.00	13.00 –14.50

	Nov. 7	Oct. 31
	Bulk	Bulk
180 vis. No. 3 color neutral:		
0-10 p.p.	10.00 –10.50	10.00 –10.50
15-30 p.p.	9.50 –10.00	9.50 –10.00
200 vis. No. 3 color neutral:		
0-10 p.p.	10.00 –10.50	10.00 –10.50
15-30 p.p.	9.50 –10.00	9.50 –10.00
600 s.r. olive green	9.00 –11.25	9.00 –11.25
600 s.r. dark green	7.00 – 9.25	7.00 – 9.25

SOUTH TEXAS LUBRICATING OILS

(Vis. at 100° cold test 0, bulk export shipment, f.o.b. terminals.)

Unfiltered Pale Oils: Vis.	Color		
100	No. 3	4.75 – 5.00	4.75 – 5.00
200	No. 3	6.25 – 6.75	6.25 – 6.75
300	No. 3	6.75 – 7.25	6.75 – 7.25
500	No. 3½	7.50 – 8.25	7.50 – 8.25
750	No. 4	8.25 – 8.75	8.25 – 8.75
1200	No. 4	8.75 – 9.25	8.75 – 9.25
2000	No. 4	9.00 – 9.50	9.00 – 9.50
Red Oils: Vis.	Color		
100	No. 5-6	4.75 – 5.00	4.75 – 5.00
200	No. 5-6	6.25 – 6.75	6.25 – 6.75
300	No. 5-6	6.75 – 7.25	6.75 – 7.25
500	No. 5-6	7.50 – 8.25	7.50 – 8.25
750	No. 5-6	8.25 – 8.75	8.25 – 8.75
1200	No. 5-6	8.75 – 9.25	8.75 – 9.25
2000	No. 5-6	9.00 – 9.50	9.00 – 9.50

Note: Red oil prices cover oils with green cast; prices for blue cast red oils are slightly lower in some cases.

Tanker Rates

(Approximate freight rates to Continental ports, shillings per ton of 2240 lbs., British sterling; U.S. ports cents per bbl.)

Rates Effective Nov. 7

	Crude & /or Fuel		Refined Oil & /or Spirits	
	Last Paid	Owners Ask	Last Paid	Owners Ask
Gulf-U.K./Cont.(q)	12/3	12/9-13/6	14/	14/6-15/6
Aruba-U.K./Cont.(q)	10/3	10/9-11/6	11/	12/6-13/6
Gulf-N. Atlantic (r) (not E. of N.Y.): Hvy. Crude & fuel, (10 to 19.9 gravity)	22c	21-22c	....	....
Light Crude, (30 Grav. or Lighter)	20c	20-21c	....	....
Gasoline	....	....	21c	23-25c
Kerosine	....	....	22c	23-25c
Light Fuel	....	....	23c	23-25c

(a) Prices nominal. (b) In barge lots. (c) Fuel oils meet specifications of U. S. Commercial Standards CS12-35. (d) In ships' bunkers. (e) For barging, add 5c per bbl. (f) For barging, add 5c to 6c per bbl. (g) For barging, add 6.5c to 7.5c per bbl. (h) 150 fire point. (i) For San Francisco cargo prices, add 5c per bbl. to cargo prices shown above. (j) Pacific Specification 200. (k) Pacific Specification 400. (l) Shipment either in bags or in bulk. (m) Less than ½ of 1% sulfur. (n) No prices reported. (o) Barging 5c per bbl. additional at some Gulf ports. (p) Second-hand barrels. (q) Continental ports in range between Bordeaux and Hamburg, both inclusive. (r) Venezuela loading, same rate; Tampico, 2c to 3c per bbl. additional. (s) Low pour test, low viscosity, No. 5 generally quoted at $1.25.

CRUDE OIL MARKETS

Prices in $ per bbl. of 42 U. S. gals. at the well. A. P. I. gravity. Prices are effective as of 7 a. m. of dates as given

EASTERN FIELDS

Posted by Joseph Seep Purchasing Agency
(Effective Sept. 1, 1938, except Corning Oct. 18, 1938)

Penna. Grade Oil in Southwest Penna. Pipe Lines.....$1.34
Penna. Grade Oil in Eureka Pipe Lines (West Virginia).....$1.28
Penna. Grade Oil in Buckeye Pipe Lines (Macksburg, O.).....$1.18
Corning Oil in Buckeye Pipe Lines (Ohio)...$0.97

Posted by Other Companies

Tide Water Associated Oil Co.
Bradford-Allegany district (Penna. and N. Y.) (Effective Sept. 1, 1938).....$1.68
*The Pennzoil Co.: (Effective Sept. 1, 1938)
Penna. Grade Oil in National Transit Lines*$1.61
*The Pennzoil Co. posts $1.61 in Cochran, Franklin, Hamilton and Doolittle, Pa. fields; prices in other lower districts range down to $1.56 per bbl. at well.

MICHIGAN

Posted by Pure Oil Co.
Midland, Midland County (Oct. 14, 1938)...$0.925

Posted by Simrall Corp.
(Effective Oct. 13, 1938)

Allegan, Crystal, Greendale, Porter and equal grades.....$0.925
Beaverton, Buckeye, Bentley, Edenville...$0.90
Freeman.....$0.87
West Branch, Arenac, and equal grades....$0.74

CENTRAL STATES FIELDS

Posted by Ohio Oil Co.
(Effective Oct. 13, 1938)

Illinois and Princeton.....$1.05
Illinois Basin.....$1.15
Owensboro, (Western Ky.).....$1.10
Lima, O.....$0.90

Posted by Owensboro Corp.

Illinois Basin:
Beecher City (Effective Oct. 13, 1938).....$1.15
Centralia Field:
Congested District (Effective Oct. 1, 1938).$1.15
Area Outside Congested District (Effective Oct. 13, 1938).....$1.15

Posted by Carter Oil Co.
(Effective Oct. 14, 1938)

Louden, Fayette County, Ill.....$1.15

Posted by Ashland Oil & Transportation Co.
(Effective Oct. 14, 1938)

Somerset Oil in Ashland Lines, Kentucky:
Big Sandy River.....$1.12
Kentucky River.....$1.20

Posted by Stoll Oil Refining Co.
(Effective Oct. 12, 1938)

Stoll Pipe Line Oil (Ky.).....$1.10

Posted by Fordsville Gathering Line, Inc.
(Effective Oct. 13, 1938)

Birk City Field, Ky.....$1.10
Owensboro District, Ky.....1.10

CANADIAN FIELDS

Posted by Imperial Oil Limited
Western Ontario
(Effective Oct. 25, 1938)

Petrolia.....$1.90
Oil Springs.....$1.97

Alberta—Turner Valley
(Prices f.o.b. field tankage)
(Effective Jan. 5, 1938)

Crude Oil			
40-40.9*	$1.14	53-53.9	$1.40
41-41.9	1.16	54-54.9	1.42
42-42.9	1.18	55-55.9	1.44
43-43.9	1.20	56-56.9	1.46
44-44.9	1.22	57-57.9	1.48
45-45.9	1.24	58-58.9	1.50
46-46.9	1.26	59-59.9	1.52
47-47.9	1.28	60-60.9	1.54
48-48.9	1.30	61-61.9	1.56
49-49.9	1.32	62-62.9	1.58
50-50.9	1.34	63-63.9	1.60
51-51.9	1.36	64-64.9	1.62
52-52.9	1.38		

Crude Naphtha, 65 grav. & above.....$2.14

Absorption Gasoline
90% Rec., 20 lb. Reid v.p.....$1.94
90% Rec., 17 lb. Reid v.p.....$2.08

MID-CONTINENT

Oklahoma-Kansas

*(Effective Oct. 11 to 22, 1938)

	S. O. Indiana	Carter Magnolia Sinclair Shell	Continental Texas Co.
Below 21°.	$0.70	$0.60	....
21-21.9	.72	.63	....
22-22.9	.74	.66	....
23-23.9	.76	.69	....
24-24.9	.78	.72	....
25-25.9	.80	.75	....
26-26.9	.82	.78	....
27-27.9	.84	.81	....
28-28.9	.86	.84	$0.86
29-29.9	.88	.87	.88
30-30.9	.90	.90	.90
31-31.9	.92	.92	.92
32-32.9	.94	.94	.94
33-33.9	.96	.96	.96
34-34.9	.98	.98	.98
35-35.9	1.00	1.00	1.00
36-36.9	1.02	1.02	1.02
37-37.9	1.04	1.04	1.04
38-38.9	1.06	1.06	1.06
39-39.9	1.08	1.08	1.08
40 & above	1.10	1.10	1.10

*Effective by Carter Oil, Oct. 13, posting in Okla. only; Continental Oil, Oct. 11, with lowest grade below 29; Magnolia, Oct. 12, posting in Okla. only; Shell, Oct. 22; Sinclair-Prairie, Oct. 14, with lowest grade 21-21.9; S. O. Indiana, Oct. 17; The Texas Co., Oct. 12.

North-North Central and Central Texas

*Effective 1938:	Stanolind Oct. 17	Sinclair-Prairie Oct. 11	*Texas Co. *Continental	Magnolia Oct. 12
Below 21°.	$0.60	....	....	....
21-21.9	.62	....	....	....
22-22.9	.64	....	....	....
23-23.9	.66	....	....	....
24-24.9	.68	$0.76	$0.79	$0.79
25-25.9	.70	for	for	for
26-26.9	.72	oil	oil	oil
27-27.9	.74	below	below	below
28-28.9	.76	29°.	29°.	29°.
29-29.9	.78	.78	.81	.81
30-30.9	.80	.80	.83	.83
31-31.9	.82	.82	.85	.85
32-32.9	.84	.84	.87	.87
33-33.9	.86	.86	.89	.89
34-34.9	.88	.88	.91	.91
35-35.9	.90	.90	.93	.93
36-36.9	.92	.92	.95	.95
37-37.9	.94	.94	.97	.97
38-38.9	.96	.96	.99	.99
39-39.9	.98	.98	1.01	1.01
40-40.9	1.00	1.00	1.03	1.03
41-41.9	for	for	for	1.05
42-42.9	oil	oil	oil	1.07
43-43.9	40 &	40 &	40 &	1.09
44-44.9	above	above	above	1.11
45 & above.	....	....	....	1.13

*Effective Oct. 11, by Continental, in North Tex.; Oct. 12, by Texas Co. in North & North Central Texas. Texas Co.'s lowest grade is 28-28.9, at $0.79.

Jefferson County, Texas	Beaumont (Magnolia) (Oct. 12, 1938)	West Beaumont (Humble) (May 1, 1938)
Below 20°.	$0.79	
20-20.9	0.82	*$0.95
21-21.9	0.85	0.98
22-22.9	0.88	1.01
23-23.9	0.91	1.04
24-24.9	0.94	1.07
25-25.9	0.97	1.10
26-26.9	1.00	1.13
27-27.9	1.02	1.15
28-28.9	1.04	1.17
29-29.9	1.06	1.19
30-30.9	1.08	1.21
31-31.9	1.10	1.23
32-32.9	1.12	1.25
33-33.9	1.14	1.27
34-34.9	1.16	1.29
35-35.9	1.18	1.31
36-36.9	1.20	1.33
37-37.9	1.22	1.35
38-38.9	1.24	1.37
39-39.9	1.26	1.39
40 & above.	1.28	1.41

*For below 21°.

Oct. 11, '38, Stanolind Oil & Gas Co. posted same gravity and price schedule in West Beaumont field as Magnolia.

TEXAS FIELDS

Posted by Humble Oil & Refining Co.

(*West Central Texas)
(Effective Oct. 11, 1938)

24-24.9	$0.71	35-35.9	$0.93
25-25.9	.73	36-36.9	.95
26-26.9	.75	37-37.9	.97
27-27.9	.77	38-38.9	.99
28-28.9	.79	39-39.9	1.01
29-29.9	.81	40-40.9	1.03
30-30.9	.83	41-41.9	1.05
31-31.9	.85	42-42.9	1.07
32-32.9	.87	43-43.9	1.09
33-33.9	.89	44-44.9	1.11
34-34.9	.91	45 & above	1.13

*Includes Brown, Callahan, Coleman, Comanche, Eastland, Fisher, Haskell, Jones, Shackelford, Stephens, Throckmorton and Young counties.

Note: Effective Oct. 1, 1937, Humble prices are based on 100% tank tables at 60F.

*(*East Central Texas*
(Effective Oct. 11, 1938)

23-23.9	$0.78	32-32.9	$ .96
24-24.9	.80	33-33.9	.98
25-25.9	.82	34-34.9	1.00
26-26.9	.84	35-35.9	1.02
27-27.9	.86	36-36.9	1.04
28-28.9	.88	37-37.9	1.06
29-29.9	.90	38-38.9	1.08
30-30.9	.92	39-39.9	1.10
31-31.9	.94	40 and above	1.12

*Including Anderson, Cherokee, Limestone, Navarro counties.

PANHANDLE TEXAS

Posted by Humble Oil & Refining Co.

	Gray County	Carson-Hutchinson
(Effective Oct. 11, 1938)		
28-28.9	$0.72	$0.67
29-29.9	0.74	0.69
30-30.9	0.76	0.71
31-31.9	0.78	0.73
32-32.9	0.80	0.75
33-33.9	0.82	0.77
34-34.9	0.84	0.79
35-35.9	0.86	0.81
36-36.9	0.88	0.83
37-37.9	0.90	0.85
38-38.9	0.92	0.87
39-39.9	0.94	0.89
40-40.9	0.96	0.91
41-41.9	0.98	0.93
42-42.9	1.00	0.95
43-43.9	1.02	0.97
44-44.9	1.04	0.99
45 & above	1.06	1.01

EAST TEXAS
(Effective *Oct. 11, 12, 13, 1938)
Gulf, Humble, Magnolia, Stanolind, Texas Co.,

Tide-Water Associated.....$1.10
*Effective Oct. 11 by Humble and Stanolind; Oct. 12 Magnolia, Texas, Tide Water; Oct. 13 by Gulf.

Shell also posted on Oct. 11, 1938, in Livingston area, Polk County, Texas, $1.10.

NORTHEAST TEXAS
(Posted by Humble, Oct. 11, 1938)

Talco.....$0.55

(Posted by Magnolia, Oct. 12, 1938)

Cass County and Panola County, Tex.:
Same gravity and price schedule as S. O. Louisiana posts for N. La.-Ark. Crude, which see under that company.

(Posted by The Texas Co., Oct. 12, 1938)

Cass County.....$1.05

WEST TEXAS AND NEW MEXICO

Posted by Humble Oil & Refining Co.
(Effective Oct. 11, 1938)

(Including Andrews, Crane, Crockett, Ector, *Gaines, Glasscock, Howard, *Reagan, Upton, Winkler and *Yoakum Counties, Texas and Lea county, New Mexico).

Below 20.	$0.53	30-30.9	$0.75
20-20.9	.55	31-31.9	.77
21-21.9	.57	32-32.9	.79
22-22.9	.59	33-33.9	.81
23-23.9	.61	34-34.9	.83
24-24.9	.63	35-35.9	.85
25-25.9	.65	36-36.9	.87
26-26.9	.67	37-37.9	.89
27-27.9	.69	38-38.9	.91
28-28.9	.71	39-39.9	.93
29-29.9	.73	40 & above	.95

Pecos, West Texas.....$0.78

*Added to this posting, Aug. 29, 1938.

Oct. 12, '38, Magnolia met Humble in Crane, Glasscock, Howard, Mitchell, Upton and Winkler counties, except that its lowest grade is below 25 at $0.63.

Oct. 11, '38, Shell Petroleum met Humble in Crane, Ector, Glasscock, Howard, Upton and Winkler counties, Tex., and Lea county, N. M., except that its highest grade is 36 & above, at $0.87. It met Humble in Pecos, and in Pecos county Yates shallow pool, posted $0.65.

Oct. 11, '38, Stanolind Oil & Gas Co. met Humble in Hendrick field, Winkler, except that its lowest grade is below 26 at $0.65.

Oct. 12, '38, The Texas Co. posted in Ward and Winkler counties, Tex., and Lea county, N. M., same prices as Humble in West Texas, except that its lowest grade is below 26, at $0.65, and its highest grade, 36 and above, at $0.87.

Posted by Continental Oil Co.
(Effective Oct. 11, 1938)

Artesia, Jackson and Maljamar pools, New Mexico: gravity schedule beginning with below 29, at $0.61; 29-29.9, at $0.63; plus 2c differential for each gravity, up to 40 & above, at $0.85.

COLORADO

Posted by Continental Oil Co.
(Effective Oct. 11, 1938)
Ft. Collins and Wellington

Below 29.	$0.81	35-35.9	$0.95
29-29.9	.83	36-36.9	.97
30-30.9	.85	37-37.9	.99
31-31.9	.87	38-38.9	1.01
32-32.9	.89	39-39.9	1.03
33-33.9	.91	40 & above.	1.05
34-34.9	.93		

Canon City and Florence, Col.....$0.90

SOUTH AND SOUTHWEST TEXAS

All Shown Below Posted by Humble Oil & Refining Co.
(Effective Oct. 11, 1938)

Carroll, Clark, Darst Creek, Hilbig, Salt Flat and Zoboroski crudes.....$0.96
Van crude.....$0.93
Flour Bluff.....$1.27
Pettus.....$1.29

Oct. 12, '38, Magnolia met Humble in Darst Creek; posted $0.87 in Luling; $0.99 in Lytton Springs; $1.14 for Cleveland, and $1.02 in Hardin, both in Liberty county, Tex.

Oct. 12, '38, The Texas Co. met Humble in Darst Creek.

Anahuac and Dickinson
(Effective Oct. 11, 1938)

Below 20°	$0.74	33-33.9	$1.09
20-20.9	.77	34-34.9	1.11
21-21.9	.80	35-35.9	1.13
22-22.9	.83	36-36.9	1.15
23-23.9	.86	37-37.9	1.17
24-24.9	.89	38-38.9	1.19
25-25.9	.92	39-39.9	1.21
26-26.9	.95	40-40.9	1.23
27-27.9	.97	41-41.9	1.25
28-28.9	.99	42-42.9	1.27
29-29.9	1.01	43-43.9	1.29
30-30.9	1.03	44-44.9	1.31
31-31.9	1.05	45 & above	1.33
32-32.9	1.07		

*Includes Barbers Hill, Cedar Point, Fairbanks, Gillock, Hull, Liberty, Orange, Pierce Junction and Raccoon Bend (shallow sand).

Raccoon Bend (Deep sand crude) Tomball and Satsuma
(Effective Oct. 11, 1938)

22-22.9	$0.95	34-34.9	$1.19
23-23.9	.97	35-35.9	1.21
24-24.9	.99	36-36.9	1.23
25-25.9	1.01	37-37.9	1.25
26-26.9	1.03	38-38.9	1.27
27-27.9	1.05	39-39.9	1.29
28-28.9	1.07	40-40.9	1.31
29-29.9	1.09	41-41.9	1.33
30-30.9	1.11	42-42.9	1.35
31-31.9	1.13	43-43.9	1.37
32-32.9	1.15	44-44.9	1.39
33-33.9	1.17	45 & above	1.41

(Continued on next page)

CRUDE OIL MARKETS *(Continued from preceding page)*

South-Southwest Texas (cont'd)

(Effective Oct. 11, 1938)

Conroe.....$1.27

Jefferson County, Tex.

For Beaumont, see prices by Humble, Magnolia and Stanolind on previous page.

Posted by Humble

**Mirando*

(Effective Oct. 11, 1938)

Below 20°.....	$0.74	33-33.9.....	$1.09
20-20.9.....	.77	34-34.9.....	1.11
21-21.9.....	.80	35-35.9.....	1.13
22-22.9.....	.83	36-36.9.....	1.15
23-23.9.....	.86	37-37.9.....	1.17
24-24.9.....	.89	38-38.9.....	1.19
25-25.9.....	.92	39-39.9.....	1.21
26-26.9.....	.95	40-40.9.....	1.23
27-27.9.....	.97	41-41.9.....	1.25
28-28.9.....	.99	42-42.9.....	1.27
29-29.9.....	1.01	43-43.9.....	1.29
30-30.9.....	1.03	44-44.9.....	1.31
31-31.9.....	1.05	45 & above.....	1.33
32-32.9.....	1.07		

*Includes Duval, Jim Hogg, Jim Wells, Webb and Zapata counties, Tex. and Heyser and Placedo crudes.

Oct. 12, '38, Texas Co. posted for Duval-Mirando, $0.77 for below 21, plus 3c differential to 26-26.9, $0.95; 27-27.9, $0.97; 28 & above, $0.99.

LOUISIANA-ARKANSAS

Posted by Standard Oil Co. of Louisiana

(Effective Oct. 5 1938)

Gravity	*N. La.-Ark.	†Columbia County, Ark.	‡South Louisiana
Below 21°.....	$0.73	$0.66	$0.74
21-21.9.....	for	for	.77
22-22.9.....	oil	oil	.80
23-23.9.....	Below	Below	.83
24-24.9.....	25°	25°	.86
25-25.9.....	$0.75	$0.68	.89
26-26.9.....	.77	.70	.92
27-27.9.....	.79	.72	.94
28-28.9.....	.81	.74	.96
29-29.9.....	.83	.76	.98
30-30.9.....	.85	.78	1.00
31-31.9.....	.87	.80	1.02
32-32.9.....	.89	.82	1.04
33-33.9.....	.91	.84	1.06
34-34.9.....	.93	.86	1.08
35-35.9.....	.95	.88	1.10
36-36.9.....	.97	.90	1.12
37-37.9.....	.99	.92	1.14
38-38.9.....	1.01	.94	1.16
39-39.9.....	1.03	.96	1.18
40 & above.....	1.05	.98	1.20

(Effective Oct. 5, 1938)

Smackover, Ark.....$0.73

Urania, La. (Ark. Fuel Oil Co., Jan. 28, '37)..$1.02

*Includes Bunkie, Caddo, Carterville, DeSoto, Homer, Haynesville, Rodessa, Sabine and Sarepta, in N. La.; El Dorado and Miller County, Ark. (latter is Ark. part of Rodessa field).

Note: S. O. Louisiana prices in all La.-Ark. fields, effective Oct. 5, 1938, are on 100% tank table basis.

†Includes Buckner, Magnolia, and Village pools.

‡Includes these fields: Baton Rouge, Bayou, Choctaw, Cheneyville, Darrow, Jeanerette, Lirette, N. Crowley and Roanoke.

Posted by Continental Oil Co.

(Effective Oct. 11, 1938)

*Tepetate and *Ville Platte, La.....$1.03

Oct. 12, 1938, Magnolia Petroleum and The Texas Co. posted same gravity and price schedule as S. O. La. posts in N. La.-Ark. in these fields: Magnolia, in Bull Bayou, Cotton Valley, Haynesville, Pine Island, and Rodessa, La., and Eldorado and Rainbow, Ark.; Texas Co. in N. La. Both also met S. O. La. in Smackover. Texas Co. posted $1.24 for Garden Island, La. and $1.04 for Lafitte, La.

***GULF COASTAL FIELDS**

Posted by Humble Oil & Refining Co.

(Effective Oct. 11, 1938)

Below 20.....	$0.79	30-30.9.....	$1.08
20-20.9.....	.82	31-31.9.....	1.10
21-21.9.....	.85	32-32.9.....	1.12
22-22.9.....	.88	33-33.9.....	1.14
23-23.9.....	.91	34-34.9.....	1.16
24-24.9.....	.94	35-35.9.....	1.18
25-25.9.....	.97	36-36.9.....	1.20
26-26.9.....	1.00	37-37.9.....	1.22
27-27.9.....	1.02	38-38.9.....	1.24
28-28.9.....	1.04	39-39.9.....	1.26
29-29.9.....	1.06	40 & above.....	1.28

†Refugio

Same prices as above Gulf Coastal crudes, plus these grades:

40-40.9.....	$1.28	43-43.9.....	$1.34
41-41.9.....	1.30	44-44.9.....	1.36
42-42.9.....	1.32	45 & above.....	1.38

†Includes also Saxet, Greta, O'Connor-McFadden, Taft, Plymouth and Tom O'Connor crudes.

*Humble's prices apply in these Texas fields: Amelia, Clear Lake, Goose Creek, Mykawa, Sugarland, Thompsons, Webster and West Columbia.

Oct. 11, 1938, Stanolind posted in Clinton, Hastings, High Island, So. Houston, and Spindletop, same prices as Humble in Texas Gulf Coast fields, except that Stanolind's lowest grade is below 21, at $0.82.

Oct. 12, 1938, The Texas Co. posted for Texas & La. Gulf Coast crude: $0.82 for below 21, plus 3c to 26-26.9, which is $1; from there on, 2c, to 34 & above, which is $1.16. In Refugio, same as other Gulf Coast, except highest gravity is 28 & above, $1.04.

ROCKY MOUNTAIN FIELDS

Posted by Stanolind Oil & Gas Co.

(Effective Oct. 11, 1938)

Salt Creek, (except Tensleep crude), Midway and Dutton Creek, Wyo., same schedule as Stanolind posts in Oklahoma-Kansas, ranging from $0.86 to $1.10, which see under Mid-Continent crude on previous page.

Tensleep, Salt Creek field.....	$0.646
Iles, light, Col.....	0.98
Iles, heavy.....	0.92
Elk Basin, light.....	0.90
Grass Creek, light.....	0.90
Frannie light.....	0.55
Grass Creek, heavy.....	0.40
Hamilton Dome, Wyo.....	0.35
Frannie heavy.....	0.42

Posted by Ohio Oil Co.

(Effective Oct. 11, 1938)

Elk Basin, Wyo.....	$0.90
Grass Creek, light.....	0.90
Rock Creek.....	1.20
Lance Creek.....	0.77
Dry Creek, Mont.....	0.92

(Effective May 1, 1938)

Grass Creek heavy.....$0.50

(Effective Nov. 16, 1937)

Sunburst, Mont.....$0.90

Posted by Continental Oil Co.

(Effective Oct. 11, 1938)

Cat Creek, Mont.....	$1.10
Big Muddy, Wyo.....	0.98
Lance Creek, Wyo.....	0.77

CALIFORNIA, *Posted by Standard Oil of California*

All gravities above those quoted take highest price offered in the field. Prices effective Feb. 26, 1936, except Huntington Beach, Playa del Rey, Santa Fe Springs, Kern Front, Signal Hill (Long Beach) effective March 7, 1936; Elk Hills effective June 22, 1936; Lakeview Area, Aug. 19, 1936; El Segundo and Wilmington, Oct. 15, 1937; Greeley-Canal, July 9, 1938; Santa Maria Valley, by Union Oil, Oct. 15, 1938.

Gravity	Signal Hill (Long Beach) El Segundo †Wilmington	Seal Beach	Alamitos Heights	Huntington Beach	Inglewood	Playa del Rey	Olinda Brea Canon	Athens Rosecrans	Dominguez	Torrance	Richfield	Whittier East Coyote (La Habra)	Montebello	West Coyote Hills	Santa Fe Springs	‡Newhall and others	Mountain View	Elk Hills	Buena Vista Hills Midway-Sunset Lakeview Area	Greeley-Canal (Kern County)	Lost Hills	Coalinga	Wheeler Ridge	Santa Maria (Union Oil)
13-13.9.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	$0.63
14-14.9.	$0.80	$0.79	$0.74	$0.78	$0.79	$0.80	$0.76	....	....	$0.80	$0.76	$0.76	$0.77	$0.78	....	$0.70	....	$0.70	$0.70	....	$0.70	$0.70	....	.65
15-15.9.	.80	.79	.74	.78	.79	.80	.76	....	....	.80	.76	.76	.77	.78	....	.70	....	.70	.70	....	.70	.70	....	.68
16-16.9.	.80	.79	.74	.78	.79	.80	.76	....	....	.80	.76	.76	.77	.78	....	.70	....	.70	.70	....	.70	.70	....	.70
17-17.9.	.80	.79	.74	.78	.81	.80	.76	....	....	.80	.76	.76	.77	.78	....	.70	....	.70	.70	....	.70	.70	....	.70
18-18.9.	.80	.79	.74	.78	.84	.80	.78	....	....	.82	.76	.76	.77	.78	....	.70	....	.70	.70	....	.70	.70	....	....
19-19.9.	.82	.79	.74	.82	.87	.84	.81	....	....	.85	.76	.78	.77	.78	....	.70	.70	.74	.74	....	.74	.71	.70	....
20-20.9.	.85	.79	.74	.85	.90	.88	.84	....	....	.88	.78	.82	.77	.80	....	....	.70	.78	.78	....	.78	.72	.70	....
21-21.9.	.88	.79	.74	.89	.93	.93	.88	....	....	.91	.80	.85	.77	.84	.78	....	.73	.82	.82	....	.82	.74	.70	....
22-22.9.	.92	.82	.74	.92	.96	.98	.92	....	....	.93	.84	.89	.79	.88	.78	....	.77	.87	.87	....	.86	.78	.72	....
23-23.9.	.95	.86	.77	.96	.99	1.02	.96	.84	.79	.96	.88	.93	.82	.92	.78	..	.80	.92	.92	....	.90	.82	.76	....
24-24.9.	.99	.91	.80	1.00	1.02	1.06	.99	.88	.81	.99	.91	.96	.85	.96	.82	....	.84	.97	.97	....	.94	.86	.79	....
25-25.9.	1.03	.95	.82	1.03	1.05	1.11	1.03	.93	.83	1.02	.95	....	.89	.99	.86	....	.88	1.01	1.01	....	.98	.90	.83	....
26-26.9.	1.06	1.00	.85	1.07	1.09	1.16	1.06	.98	.86	1.05	.98	....	.92	1.03	.90	....	.91	1.06	1.06	....	1.02	....	....	....
27-27.9.	1.10	1.05	.88	1.11	1.12	....	1.10	1.03	.88	....	1.02	....	.96	1.06	.95	....	.95	1.10	1.10	$0.91	1.06	....	....	....
28-28.9.	1.14	1.10	.90	1.14	1.15	....	1.14	1.07	.90	....	1.06	....	.99	1.10	.99	....	.99	1.15	1.15	.94	1.10	....	....	....
29-29.9.	1.17	1.15	.93	1.18	1.18	....	1.17	1.12	.93	....	1.09	....	1.03	1.14	1.03	....	1.02	1.20	1.20	.98	1.14	....	....	....
30-30.9.	1.21	1.19	.95	1.22	1.21	....	1.21	1.17	.95	....	....	....	1.07	1.17	1.08	....	1.06	1.25	1.25	1.02	1.18	....	....	....
31-31.9.	....	....	....	....	1.24	....	1.24	1.22	.97	....	....	....	1.11	1.21	1.12	....	1.09	1.29	1.29	1.06	....	....	....	....
32-32.9.	*Elwood Terrace		....	....	1.27	....	1.27	1.27	1.00	....	....	....	1.14	1.25	1.16	....	1.13	1.34	1.34	1.09	Kettleman Hills		....	....
33-33.9.	....	1.28	....	....	....	....	....	1.32	....	....	....	....	1.18	1.28	1.20	....	1.17	1.38	1.38	1.13	....	1.19	....	....
34-34.9.	....	1.32	....	....	....	....	....	1.37	....	....	....	....	1.22	1.32	1.25	....	1.20	....	....	1.17	....	1.23	....	....
35-35.9.	....	1.35	....	....	....	....	....	1.42	....	....	....	....	1.25	....	1.29	....	....	....	....	1.20	....	1.27	....	....
36-36.9.	....	1.39	....	....	....	....	....	1.46	....	....	....	....	1.29	....	1.33	....	....	....	....	1.24	....	1.31	....	....
37-37.9.	....	1.43	....	....	....	....	....	1.51	....	....	....	....	1.32	....	1.37	....	....	....	....	1.28	....	1.35	....	....
38-38.9.	....	....	....	....	....	....	....	1.56	....	....	....	....	1.36	....	1.42	....	....	....	....	1.31	....	1.39	....	....
39-39.9.	....	....	....	....	....	....	....	1.61	....	....	....	....	1.40	....	....	....	....	....	....	1.35	....	1.43	....	....
40-40.9.	....	....	....	....	....	....	....	1.66	....	....	....	....	1.43	....	....	....	....	....	....	1.39	....	....	....	....
41-41.9.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1.43	....	....	....	....
42-42.9.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1.46	....	....	....	....
43-43.9.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1.50	....	....	....	....
44-44.9.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1.54	....	....	....	....
45-45.9.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1.57	....	....	....	....
46-46.9.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1.61	....	....	....	....
47-47.9.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1.65	....	....	....	....
48-48.9.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1.68	....	....	....	....

F. O. B. Standard Pipe Line

*F. o. b. ship.

‡Also McKittrick, Kern River. Kern Front and Round Mountain $0.70 thru 19.9 gravity; no higher gravity quoted.

†Wilmington prices differ on gravities below 18.9. Prices are: 14-16.9, $0.75; 17-17.9, $0.77; and 18-18.9, $0.79; rest of schedule same as Signal Hill.

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National Automobile Show, Grand Central Palace, New York, Nov. 11 to 18.
National Motor Truck Show, Port of New York Authority Bldg., New York, Nov. 11 to 18.
Society of Automotive Engineers, annual dinner, Commodore Hotel, New York, N. Y., Nov. 14.
American Petroleum Institute, 19th annual meeting, Stevens Hotel, Chicago, Ill., Nov. 14 to 18.
Porcelain Enamel Institute, 8th annual meeting, Hotel Statler, Cleveland, O., Nov. 16, 17.
American Society of Mechanical Engineers, annual meeting, New York, N. Y., Dec. 5 to 9.
Exposition of Chemical Industries, Grand Central Palace, New York, Dec. 4 to 9.
Nebraska Petroleum Marketers, Inc., Omaha, Nebr., Dec. 6 to 8.
Oil & Gas Assn. of Michigan, annual meeting, Mt. Pleasant, Mich., Dec. 7.
West-Central Texas Oil & Gas Assn., annual meeting, Abilene, Tex., Dec. 10.

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Society of Automotive Engineers, annual meeting, Detroit, Mich., Jan. 9 to 13.
Missouri Independent Oil Jobbers Assn., annual meeting and trade exhibit, De Soto Hotel, St. Louis, Jan. 18, 19.
Northwest Petroleum Assn. (North Dakota Division), Elks Club, Fargo, N. D., Jan. 23, 24.
Oil Trades Assn. of New York, quarterly meeting, Waldorf-Astoria Hotel, New York, Jan. 24.
Northwest Petroleum Assn. (Minnesota Division), Lowry Hotel, St. Paul, Minn., Jan. 26 and 27.
Kentucky Petroleum Marketers Assn., 13th annual meeting, Brown Hotel, Louisville, Feb. 7, 8.
Ohio Petroleum Marketers Assn., Deshler-Wallick Hotel, Columbus, Feb. 7, 8, 9.
Assn. of Highway Officials of North Atlantic States, 15th annual meeting, Hotel Pennsylvania, New York, Feb. 15, 17.
Wisconsin Petroleum Assn., Milwaukee, Feb 21, 22, 23.

CLASSIFIED

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Wanted: Sales representative for eastern states. Must have experience with fittings for bulk and service stations. Give age, education and experience.

Address Box 60
National Petroleum News

Bankrupt Sale

NOTICE OF BANKRUPT SALE

The property of the Purity Oil Company will be sold by the Trustee in Bankruptcy on Monday, November 14th, 1938, at the office of the Company at 609 West Phelps Street, in Springfield, Missouri. The property consists of the following:

Oil and grease compounding and gasoline Bulk Plant 300,000 gallons storage capacity, four service stations, Springfield, Missouri, and five Bulk Plants, Southwest Missouri towns supplying 180 dealers.

ROSCOE C. PATTERSON,
Trustee in Bankruptcy

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For Sale—Several Million tons of
FULLERS EARTH
Report of refinery test runs available. Deposit located in Michigan on Railroad.

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FOR SALE

STEEL STORAGE TANKS

1	3-Compartment Horizontal, Electrically Welded with supports (⅝" x 2½" Angle Irons—8' Tank to Foundation.)		
1	Vertical Riveted	8 x 17	6510 Gal.
1	Vertical Riveted	7 x 12	4150 Gal.
1	Vertical Riveted	7 x 12	3890 Gal.
1	Vertical Riveted	7 x 12	3890 Gal.
1	Vertical Elec. Welded	8 x 16	6100 Gal.
1	Vertical Elec. Welded	6 x 12	2580 Gal.
1	Vertical Elec. Welded	6 x 14	3040 Gal.

Tanks constructed from ¼" Steel Plate for shell and bottom.

Approximately 2000' 2" Iron Pipe and 25 2" Valves.

Equipment in perfect condition, clean and tight. Priced low for quick sale. FOB cars, High Point.

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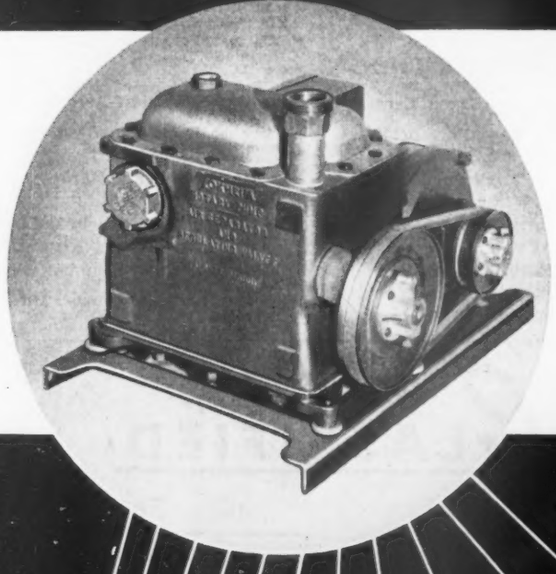

Pumping unit shown at left might have been taken from any one of the hundred Tokheim pumps below, or from any one of the thousands in use anywhere in the United States. Likewise it could be installed on any similar Tokheim model anywhere and operated with perfect accuracy.

The interchangeability of Tokheim parts is finest proof of Tokheim quality. Corresponding parts of like models are uniform within one thousandth of an inch—many within one ten thousandth—thanks to the great Tokheim plant and modern precision equipment. To the purchaser this means absolutely controlled uniformity of every unit in every Tokheim pump. It is his guarantee of satisfaction now and for years to come.

Why Station Men and Operators Both Like New Goodrich Synthetic Hose

Increases Flow →
35% faster flow in ¾" size, 20% faster in 1" size. Most buyers use ¾" instead of former 1", save money and weight. And this faster flow is *permanent.*

Improved Coupling
New leak-proof coupling attached permanently at the factory, will last as long as the hose.

Long Life
Here is Goodrich 72, virtually good as new, after test equal to 6 years' service in a busy station.

← Easy to Use
Goodrich 72 is lighter, more flexible, easier to handle. It contains no rigid metal, no stiff wire. A stranded wire in the hose wall flexes as easily as a piece of string. Station men like it, too, because its fast flow lessens trigger valve finger fatigue.

Flexible →
New Goodrich 72 takes U bend without pinching. Cars can be serviced at sharper angles from pump—less need to annoy the customer with request to "pull up" as often happens with stiff hose.

Many oil companies have already adopted Goodrich 72, and tell us they are making important savings over any other hose ever used before. And next time you order pump hose, specify Goodrich Type 72 and save money. The B. F. Goodrich Co., Mechanical Rubber Goods Division, Akron, Ohio.

Goodrich
ALL *products problems* IN RUBBER

Wm. Earle White

New president of the National Oil Marketers Association, elected at its convention in Chicago recently, is Wm. Earle White, of Petersburg, Va. Born on a Virginia tobacco farm, White served with the Fifth Marines in France during the World War. In 1926, he became attorney and director of Delta Oil Company, an independent oil jobbing company, founded 20 years ago by the late S. D. De Shazor. Delta now operates in 15 Virginia counties and owns half interest in City Point Terminal on James River. Since De Shazor's death in 1937, White has been a member of the three-man executive committee managing the Delta company. He has been active in N.O.M.A. affairs since the national jobbers' organization was formed several years ago. White is senior partner in the Petersburg law firm of White, Temple, Hamilton & Wyche.